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April 15th, 1955

A. P. I. Spring Meeting, Pacific Coast District, Division of Production

Discussions of most advanced drilling and production methods will feature the Spring Meeting of the Pacific Coast District, Division of Production, A.P.I., at the Hotel Statler, Thursday and Friday, April 28 and 29, 1955. In addition, C. F. Gates of General Petroleum Corporation, Chairman of the Pacific Coast District, and O. A. Graybeal of Sunray Oil Corporation, Chairman of the Spring Meeting, announce that speakers of national prominence will make addresses of timely interest to the more than one thousand oil men who are expected to attend the meeting.

At a banquet and evening meeting starting at 6:30 in the Pacific Ballroom, Dr. Lauren B. Hitchcock, President and Managing Director of the Air Pollution Foundation, will speak on "Air Pollution and the Oil Industry." Prior to this A. W. Thompson, President of A. W. Thompson, Inc., and Vice President, Production, A.P.I., will award Citations for Service.

The management address, to be delivered in the Pacific Ballroom on Thursday afternoon, April 28, by L. F. McCollum, president of Continental Oil Company, bears the intriguing title of "The Law of Supply and Demand—a Stubborn Critter!"

The Business Meeting will be held on Thursday afternoon at 2:00 p.m.

Registrations will begin on Thursday morning at 8:30 a.m. There will be no charge for registration but reprints of the papers will cost one dollar per set.

Charles F. Gates

Technical Sessions

F. T. Lloyd of Richfield Oil Corporation, Chairman of the Production Sessions Program Committee, and K. M. Nicolson of Standard Oil Company of California, Chairman of the Drilling Sessions Program, advise that the papers to be delivered will be of particular interest. The technical program is as follows:

Thursday morning, April 28, 9:30 a.m.

"Artificial Lifting of Deep Wells in California," by Pacific Coast District Study Committee on Artificial Lifting of Deep Wells; presented by F. T. Lloyd, Richfield Oil Corporation.

"Formation Evaluation in Exploratory Drilling," by J. E. Walstrom and J. C. Wells, Standard Oil Company of California.

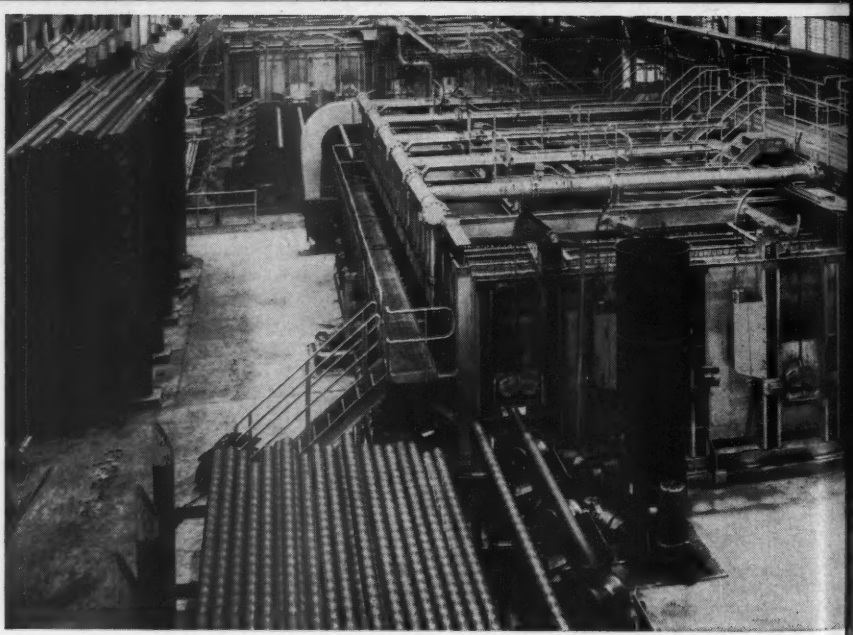
"Information vs. Cost in Exploratory Drilling," by C. R. Ball, Jr. and S. F. Fine, Richfield Oil Corporation.

Thursday afternoon, April 28, following the Business Meeting:

"Disposal of Wastes from California Oil Fields," by Hubert C. Ferry, Union Oil Company of California. This paper will be followed by the Management Address by L. F. McCollum, Continental Oil Company.

O. A. Graybeal

INTERIOR of high temperature 1650° F. furnace. The pipe moves through slowly from left to right on the conveyorized furnace bottom, passes out the exit door in the background.



OVER-ALL VIEW of J&L's new Seamless Tube Specialties Department at Aliquippa, Pa. High strength seamless steel pipe progresses automatically from the feed table in the foreground, through the heat treating furnaces in the center of the picture and into straightening, cutting and threading machines.

MORE HIGH STRENGTH CASING

J&L installs unique hearth type furnaces and quenching unit to meet driller demand

Drillers' growing need for an increased proportion of high strength steel casing is being met by J&L Steel through the addition of new facilities for the production of oil country tubular products.

Called the "Seamless Tube Specialties Department," the newest addition employs equipment of J&L design . . . makes possible the finishing of oil country casing by a quench and temper heat treatment that produces characteristics formerly attained through adjustments in the chemical composition of the steel. The result: by speeding up and improving its finishing facilities, J&L can furnish deep well drillers with more high strength casing up to 110,000 p.s.i.

If you're concerned with deep well drilling, J&L offers you a dependable source of high strength material.

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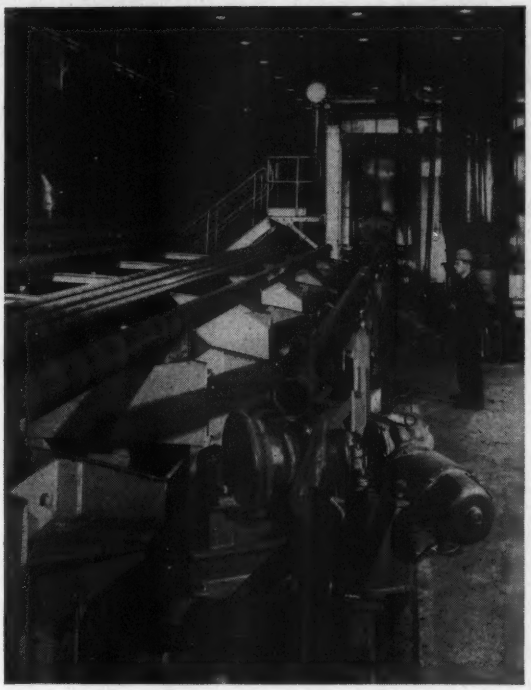
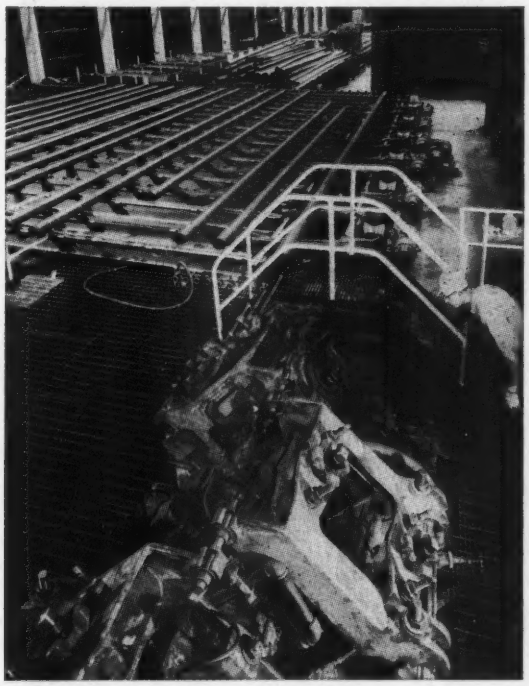


KENNETH NICHOLSON, turn foreman, checks 7-inch O.D. seamless oil well casing going into the No. 1 high temperature heat treating furnace. In this mechanically-operated, hearth-type, gas-fired furnace the pipe is normalized.



A THREE-STAND REDUCING MILL, foreground, at the exit end of the No. 2 tempering furnace, sizes the pipe to exact diameter. The No. 2 cooling bed in the upper left quarter of the picture moves and assembles the pipe for further processing.

Friday morning, April 29, 9:30 a.m.

"Factors in Evaluating a Drilling Rig," by Gene Graham, Thomas P. Pike Drilling Company.

"Influence of Drill Collar Size and Stabilizers on Deviation Control," by John W. Speer and George H. Holiday, Shell Oil Company.

"Considerations in the Use of High-Strength Steel for Oil Well Casing," by J. P. Fraser, Shell Development Company.

"Instrumenting the Sonic Drill," by C. Thomas Maxwell, Petro-Mechanics Research Div., Borg-Warner Corp.

Friday afternoon, April 29, 2:00 p.m.

"Pressure Maintenance by Gas Injection," by Francis J. Barker, Union Oil Company of California.

"Review of California Water-Flooding Operations," by N. van Wingen, Consulting Engineer and Professor, University of Southern California.

"The Application of Low-Temperature Separators and Supplemental Equipment to High-Pressure Gas-Condensate Production," by Lee R. Jamison, The Ohio Oil Company.

Officers and Committees

Officers of the Pacific Coast District for 1954-55 are:—C. F. Gates of General Petroleum Corporation, Chairman; E. M. Benson, Jr., of Richfield Oil Corporation, Vice Chairman, Los Angeles Basin; John Van Riper, Continental Oil Company, Vice Chairman, Coastal Area; Hugh C. Mays of Crescent Petroleum Company, Vice Chairman, San Joaquin Valley; Jack Lemley of Standard Oil Company of California, Vice Chairman, Coalinga-Kettleman; Chas. T. Reichert of National Supply Company, Treasurer; I. B. Doyle of Hydril Corporation, Assistant Treasurer; Mrs. Elsie M. Edmiston, A.P.I., Secretary; Lot Bowen of Western Gulf Oil Company, Chairman of Advisory Committee; Sam Grinsfelder of Union Oil Company of California, Vice Chairman of Advisory Committee.

For the 1955 Spring Meeting:—Oran Graybeal of Sunray Oil Corporation, General Chairman.

General Arrangements Committee:—J. V. Hulihan of Bethlehem Supply Company, Chairman; W. B. Reinhold of Abegg & Reinhold, Vice Chairman, Finance; W. O. Anderson of Oil Tool Corporation, Vice Chairman, Publications; E. A. Plunkett of National Supply Company, Vice Chairman, Hotel Accommodations; Edward Leicester of Oil Well Supply Company, Tickets; Wallace A. Sawdon, Vice Chairman, Publicity.

Production Sessions Program Committee:—F. T. Lloyd of Richfield Oil Corporation, Chairman; T. A. Bertness of General Petroleum Corporation; J. T. Carriel of Southwest Exploration Company; F. S. Fowler of Standard Oil Company of California; J. I. Gates of Shell Oil Company; Howard Lorenz of Standard Oil Company of California; W. C. Sheldon of Ohio Oil Company; Paul Andrews of Signal Oil & Gas Company.

Drilling Sessions Program Committee:—K. M. Nicolson of Standard Oil Company of California, Chairman; H. B. Barton of Humble Oil & Refining Company; H. A. Buchanan of Bell & Burden, Inc.; C. E. Ensley of Richfield Oil Corporation; J. K. Kellogg of K. L. Kellogg & Sons; Robert Kettenburg of Shell Oil Company; Jack Rogers of Honolulu Oil Corporation; H. M. Stanier of Sunray Oil Corporation; W. J. Travers, Jr., of Richfield Oil Corporation.

Rexforming

By
H. W. Grote
V. Haensel
M. J. Sterba
Universal Oil Products Company
30 Algonquin Road
Des Plaines, Illinois

Introduction

During the last six years Universal has had the privilege of presenting to the annual WPRA meetings a number of developments of great significance to the petroleum refining industry. We are again here to discuss with you an important new catalytic reforming process. This new process, which is named Rexforming, will permit refiners to produce, as a major proportion of their gasoline output, superior fuels, including products of over 100 clear octane rating.

The refining industry has been deeply concerned with recent trends in both the automotive and refining fields which give rise to predictions of unprecedented increases in gasoline quality in the near future. In recognition of these trends we have directed research efforts toward the development of a practical method for the production of such "super quality" gasolines.

The trend of octane ratings of marketed gasoline has been steadily upward. Over the 8-year interval, 1946-1954, the octane number of regular grade fuel has increased from 79 to 85, or about 0.8 units per year. Similarly, premium fuel quality has increased from 85 to 93, or about one octane number per year. The total refinery output has increased even more rapidly in octane rating than is indicated by these numbers, due to the steady trend toward a higher percentage of premium demanded by markets. There is no evidence that this trend toward higher octane numbers will greatly diminish in the near future.

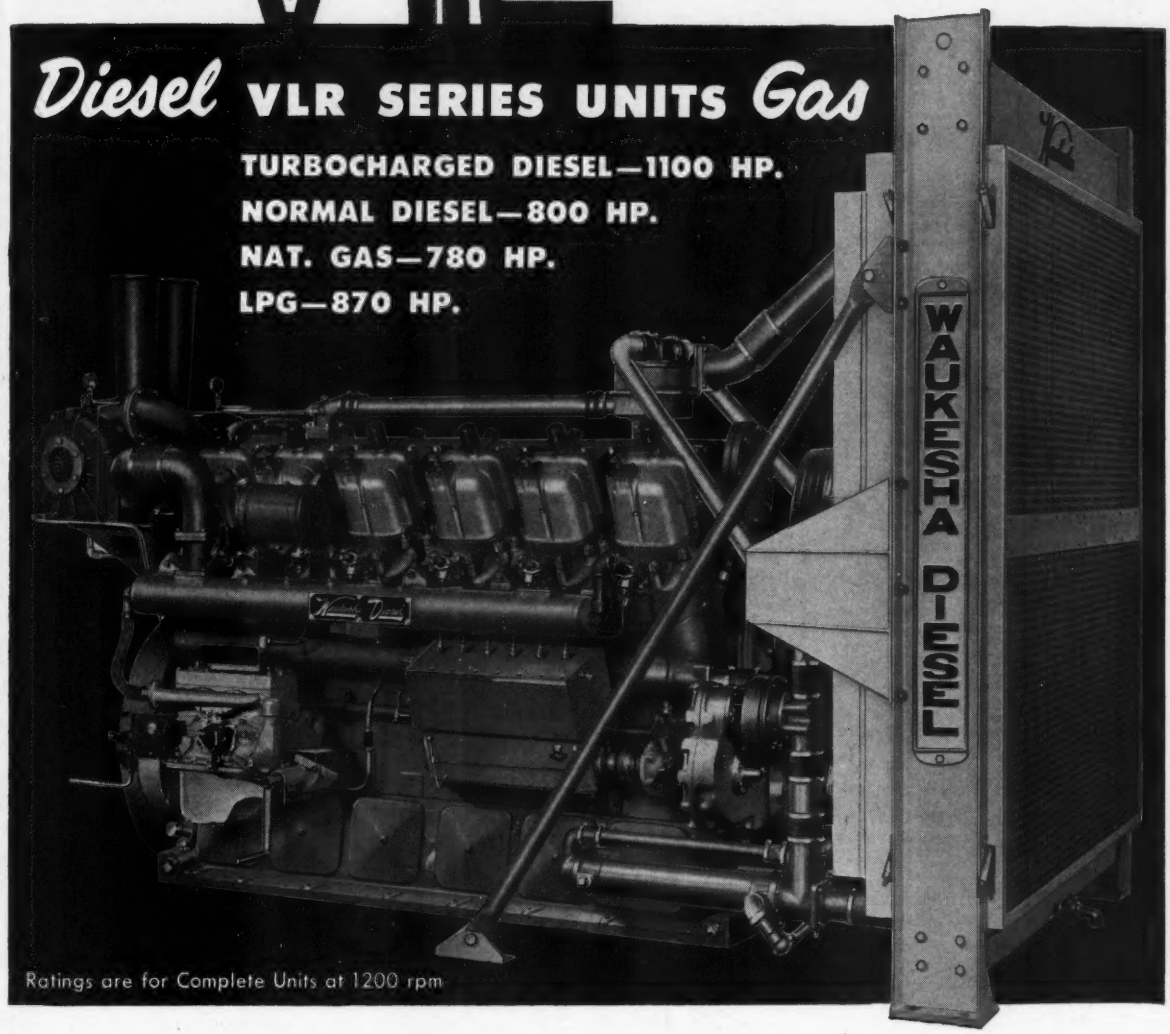
A remarkably parallel trend is exhibited by the characteristics of recent automobile engines. Each year shows engines having higher compression ratios and higher power outputs, requiring fuels of increasing quality to maintain satisfactory antiknock performance. To illustrate, in 1951 a fuel having a Research Method octane rating of 84 gave knock-free performance in 50% of cars less than 6 years old. An octane number of 90 satisfied 90% of such cars. U.O.P. road test data for 1954 indicate increases in both of these requirements of about two octane ratings over the three-year period. Cars of several of the higher powered 1954 models had requirements which demanded about 94 octane fuel. This upward trend in octane requirement will certainly continue.

Although automotive research seems to point to more demanding engines, even up to as high as 12:1 compression ratio, the question of which of

new V-12 WAUKESHA

Diesel VLR SERIES UNITS Gas

TURBOCHARGED DIESEL—1100 HP.
NORMAL DIESEL—800 HP.
NAT. GAS—780 HP.
LPG—870 HP.



Ratings are for Complete Units at 1200 rpm

This powerful turbo-supercharged Waukesha is a twelve-cylinder, 60-degree vee, even firing, four-cycle, solid injection, overhead valve, compression ignition Diesel, of 8½-inch bore and stroke and 5788 cubic inch displacement. The connecting rod arrangement is of the side-by-side type; opposing pistons operating from a single wide-area crankpin.

The turbocharged Diesel unit shown above develops approximately 1100 hp at 1200 rpm with radiator, fan, and air cleaners. Without turbocharging, the normal Diesel complete unit maximum rating is 800 hp. The propane-butane model of this V-12 series develops 870 hp. Bare engine ratings of all models are higher. Response to throttle and load requirements is quick and smooth, with a fast surge of reserve power for emergency and overload demands.

Tremendously powerful, remarkably rugged, this V-12 engine is designed for simplicity and reliability. Major parts are interchangeable between right and left cylinder banks. Main and rod bearings are easily accessible. Strength, precision and balance are built into all elements of the power train, from pistons to flywheel. Supporting members are designed for extreme rigidity and perfect alignment of moving parts.

Send for illustrated Bulletins 1663 (turbocharged)—1664 (normal Diesel)—1656 (gas).

270

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN • NEW YORK • TULSA • LOS ANGELES

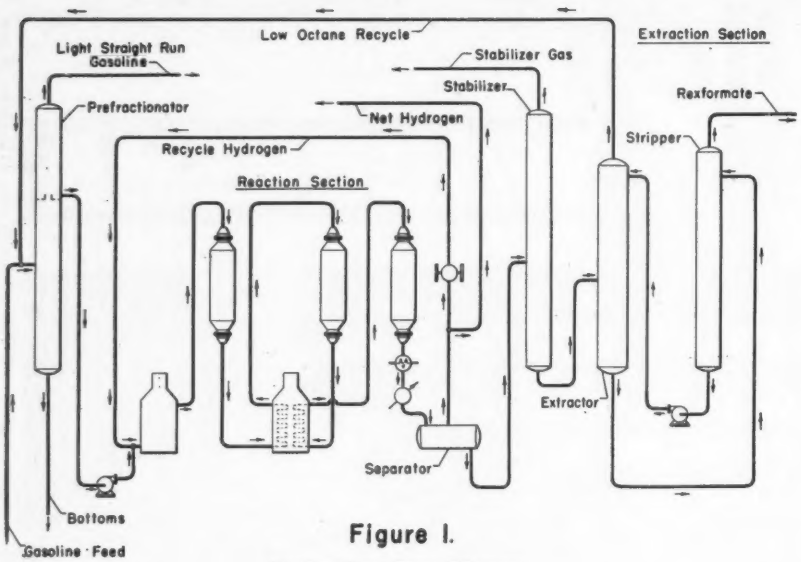


Figure I.

Rexforming Flow Diagram.

these factors came first, the more demanding engines or the higher gasoline octane numbers, is unimportant. The fact remains that refiners have been faced with relentlessly increasing gasoline quality specifications. Therefore, they have had to take steps to insure that gasoline output is of competitive quality.

At the 1949 WPRA meeting held here in San Antonio, Universal announced the availability of the U.O.P. Platforming Process—the first catalytic reforming process to be applied widely in both large and small refineries. The extensive adoption of Platforming, pioneering the use of platinum catalysts for reforming, demonstrated that this process fills a real need of refiners all over the world. Platforming has become a valuable tool permitting refiners to market gasolines of the increasing quality demanded by the motoring public. This was the first commercial demonstration of improved yields and operating economies realized by use of a selective catalyst, which also eliminated the necessity of periodic regeneration to remove catalyst deposits.

The production of aromatic hydrocarbons by dehydrogenation of naphthenes and by dehydrocyclization of paraffins is an important part of the chemistry of Platforming. The demand for aromatics of high purity indicated a profitable alternate Platforming operation, if the aromatics could be economically separated at high purity. The Udex process, utilizing new solvent extraction techniques, was developed. Use of the Udex process permitted for the first time an economical, clean separation of mixed aromatic hydrocarbons as a class from non-aromatics. Wide boiling mixtures are processed allowing simple distillation of the recovered aromatics for the production of nitration grade benzene, toluene, and mixed xylenes. The combined use of the Platforming and Udex processes permits the oil industry to produce large volumes of extremely pure aromatics. A number of such commercial installations, handling a variety of feeds over a period of years, have proven the application of this novel solvent extraction technique to refinery operations.

With the widespread adoption of catalytic reforming, it became important to develop means for handling marginal feed stocks, which due to their sulfur, nitrogen, olefin and metals contents would be unsuitable for catalytic reforming. One year ago the solution to this problem, through application of the Unifining process, was announced to the industry at this meeting.

Today we offer the petroleum industry a new refining tool, Rexforming, which will permit the production of fuels of any useful octane rating, without limitations due to feed stock.

Description of Process

It is seen, by reference to the flow diagram of Figure 1, that the Rexforming process consists of several integrated parts; feed prefractionator, the reaction section, a stabilizer and an extraction section.

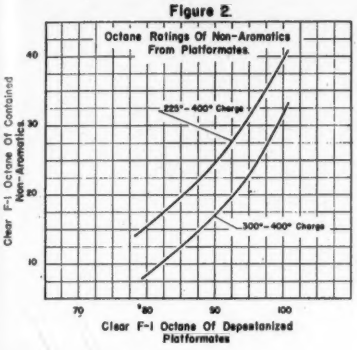
Let us consider the processing of a full boiling range gasoline. This charging stock is fed to a reboiled prefractionator which removes overhead a light gasoline fraction. The side-cut from this column is the combined feed to the reaction section. The flow through the reactors which contain the Platforming catalyst, and through the heaters is similar to that of a Platforming unit. The reactor effluent, after cooling, passes to a separator, from which a hydrogen rich gas is circulated to the reactors. The net vent hydrogen is also removed from this separator.

The separator liquid is fed to a stabilizer which in this case serves as a debutanizer. The stabilized material is charged to an extraction column, which continuously rejects from the top of the column the low octane number components. This rejected stream is returned to mix with fresh feed, achieving selective conversion of low octane heavy paraffins to high octane components. The separation in the extractor is selective in that the higher boiling non-aromatics, and these are the lowest octane constituents of a reformate, are least soluble in the solvent. On the other hand, the aromatics and the lower boiling non-aromatics, both of which are the high octane components, are relatively more soluble and are removed from the extractor with the rich solvent.

Dissolved hydrocarbons are removed from the rich solvent by stripping, yielding a gasoline of well balanced boiling range as the high octane product of the process. Lean solvent from the stripper is returned to the extractor to complete the solvent cycle.

In the Rexforming process, the reaction section can be operated at mild conditions to produce an effluent having an octane number of 75 to 85 F-1 clear and containing 35-45% aromatics. The extraction section serves to separate from this effluent a stream of increased aromatic content, containing the highest octane paraffins in the reactor effluent. This stream, the Rexformate, when of 100 clear octane number, will contain 60-65% aromatics. The remaining low octane, higher boiling paraffins are left in the raffinate stream, to be recycled to the reforming section for further processing. Furthermore, minor amounts of aromatics can be left in the recycle raffinate stream without effect on the

Figure 2.


Octane Ratings Of Non-Aromatics From Platformates
225°-400° Charge
300°-400° Charge
Clear F-1 Octane Of Contained Non-Aromatics
Clear F-1 Octane Of Depentanized Platformates

efficiency of the process. Thus, investment and operating costs for the extraction section are much lower than those for extraction operations designed to make pure aromatics at high recoveries.

Factors Involved in Production Of Super-Fuels

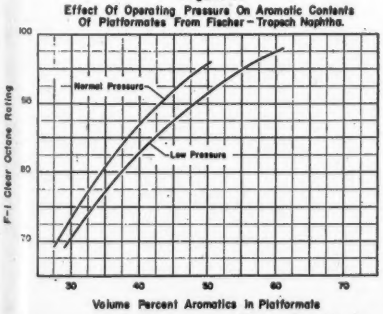
In earlier papers on reforming we have stressed that for an ideal operation all components of the charging stock should be converted into higher octane number materials. We have also emphasized that the ideal process should be effective for a wide variety of charging stocks.

The usual charge stocks to reforming operations contain small amounts of aromatics, the balance being naphthenes and paraffins. The aromatics are of excellent octane quality, and are stable at reforming conditions.

The primary reaction of naphthenes in catalytic reforming is the essentially complete conversion to aromatics by dehydrogenation.

Paraffins undergo three reactions: isomerization, hydrocracking, and dehydrocyclization. The isomerization reaction is the fastest of the three but it is useful only at moderate octane levels because the equilibrium mixture contains substantial proportions of low octane paraffins. Hydrocracking is a

Figure 3.


Effect Of Operating Pressure On Aromatic Contents Of Platformates From Fischer-Tropsch Naphtha.
Normal Pressure
Low Pressure
F-1 Clear Octane Rating
Volume Percent Aromatics In Platformate

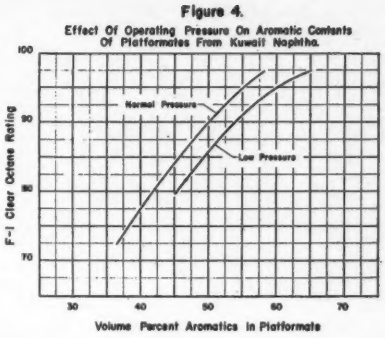
potent means for upgrading the higher molecular weight paraffins, which are of extremely poor octane. The octane number increase obtained is very substantial, and yields are excellent due in large part to the fact that the products are of lower density than the parent hydrocarbons. However, the extent of this reaction must be properly balanced with the other reforming reactions because of volatility specifications. Dehydrocyclization, or the conversion of paraffins to aromatics and hydrogen, is an important and effective means of improving octane ratings. The fact that this reaction involves a substantial volumetric loss due to both density change and production of hydrogen is overshadowed by the extremely large octane increase. The extent to which dehydrocyclization proceeds in once-through operations is limited by the fact that as aromatic concentrations increase, the rate of additional dehydrocyclization is drastically reduced.

Because of the factors discussed above all once-through reaction products contain small, but important, amounts of residual low octane paraffins. The presence of such materials constitutes a very real barrier to the production of super quality fuels by once-through operations.

To investigate this point, a study was made of the nature of the non-aromatic hydrocarbons, principally paraffins, present in a variety of Platformates. The octane ratings of such materials vary with feed stock naphthenicity and boiling range, as well as reforming operating conditions and conversion level, so that no simple relationships exist. Typical data obtained from Platforming of Midcontinent naphtha fractions are shown in Figure 2. For Platformates of 95 to 100 clear F-1 octane rating, the contained non-aromatics range from 20 up to 40 clear octane, with the lower values being associated with the higher boiling feed naphtha. At higher severities, the non-aromatic portion increases in octane number due to selective removal of heavier paraffins both by dehydrocyclization to aromatics and by hydrocracking to lower boiling, less reactive, and higher quality paraffins. A detailed examination of the non-aromatic portion of a different Platformate is given in Table 1. It will be noted that the lowest octane ratings are associated with the highest boiling fractions.

It is evident from these data that

Figure 4.


Effect Of Operating Pressure On Aromatic Contents Of Platformates From Kuwait Naphtha.
Normal Pressure
Low Pressure
F-1 Clear Octane Rating
Volume Percent Aromatics In Platformate

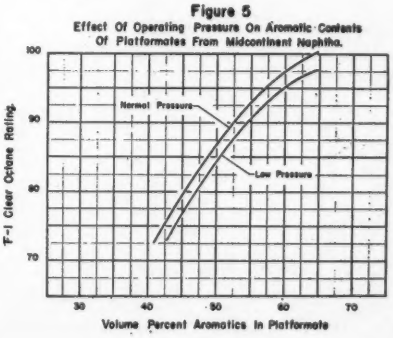
even a few percent of the higher boiling non-aromatics are seriously detrimental in superoctane fuels. Something had to be done to such low quality non-aromatic hydrocarbons before they could be economically used. A new procedure was required which would eliminate the barrier placed by the low octane paraffins.

One procedure considered for offsetting the presence of low octane paraffins was operation at reduced pressures. Such an operation increases the production of aromatics, but leaves poorer quality paraffins in the product. Examination of the curves of Figures 3, 4, and 5 shows that for three very different feed stocks, lower pressure operations require higher concentrations of aromatics at given octane levels over the entire octane range. This can only mean that the non-aromatics in these products are of poorer quality at the lower pressures.

Aromatic concentrations in motor gasolines have generally been increasing along with the upward trends in octane ratings. This is the expected result from inclusion of more and more catalytically reformed and catalytically cracked gasolines in refinery outputs. There have been some combustion problems attributed to this trend. Minimizing aromatic contents at the target octane level, therefore, seems desirable.

Aromatic concentrations can be re-

Figure 5


Effect Of Operating Pressure On Aromatic Contents Of Platformates From Midcontinent Naphtha.
Normal Pressure
Low Pressure
F-1 Clear Octane Rating
Volume Percent Aromatics In Platformate

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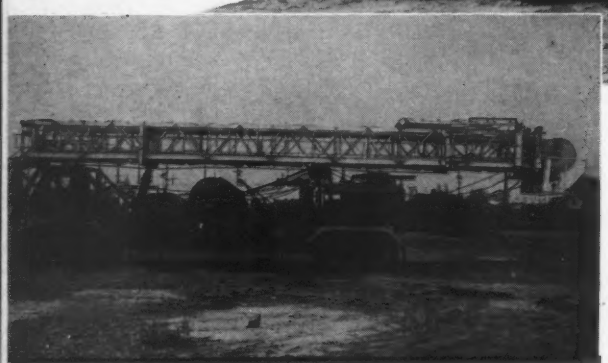

These two photos show views of the Wilson Winchmobile as it is about ready to roll on the highways (top) and also how the engines are arranged at the rear of the unit.

Wilson WINCHMOBILE

TORCAIR TYPE WELL SVI

- The Winchmobile can be delivered road legal for we ng up to 10,000 ft. or permit road legal for deep we ng and workover.
- Choice of Wilson "Y" Base Type hydraulic r d telescoped mast.

60′ Single Raise	100,000#	capacity
65′ Telescoping	140,000#	capacity
90′ Telescoping	160,000#	capacity
96′ Telescoping	160,000#	and 250,000# y
102′ Telescoping	250,000#	

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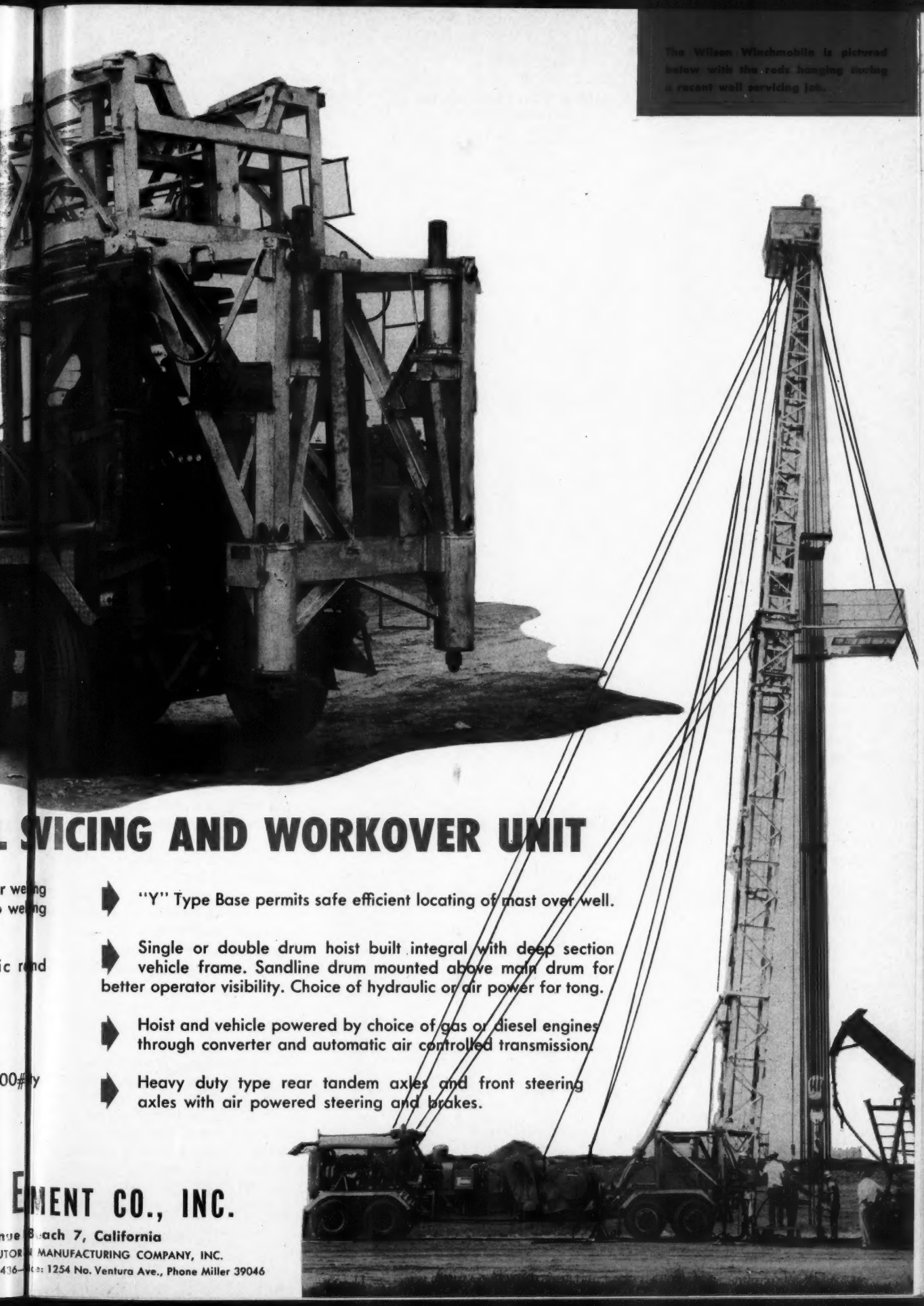
The Wilson Winchmobile is pictured below with the rods hanging during a recent well servicing job.



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- "Y" Type Base permits safe efficient locating of mast over well.
- Single or double drum hoist built integral with deep section vehicle frame. Sandline drum mounted above main drum for better operator visibility. Choice of hydraulic or air power for tong.
- Hoist and vehicle powered by choice of gas or diesel engines through converter and automatic air controlled transmission.
- Heavy duty type rear tandem axles and front steering axles with air powered steering and brakes.

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: 1254 No. Ventura Ave., Phone Miller 39046

Table 1

NON-AROMATICS FROM A PLATFORMATE

Fraction No.	Fraction Boiling Range °F.	Fraction Volume % of Total	F-1 Clear Octane No.
1	Up to 115	14.4	—
2	115-142	9.9	80.5
3	142-151	10.0	68.7
4	151-157	10.0	47.4
5	157-194	9.9	63.3
6	194-199	10.2	55.6
7	199-219	8.8	18.6
8	219-261	13.0	35.4
9	261-306	8.5	9.3
10	306-349	3.9	3.8
11	Bottoms	1.4	Not determined
		100.0	

Table 2

LABORATORY REXFORMING DATA
MIDCONTINENT FEED STOCK

Test No.	Charge	1	2
Inspections of Rexformate*			
Gravity, °A.P.I.	52.5	44.3	37.3
F-1 Clear Octane	30.0	95.2	101.8**
Aromatics, Vol. %	8	56	77
100 Ml. Distillation			
I.B.P., °F.	248	124	120
5%	264	162	160
10	270	180	189
30	289	249	288
50	312	297	326
—	—	—	—
70	340	339	353
90	370	382	392
95	379	402	413
E.P., °F.	390	426	429
Yields			
Separator Gas, SCF/Bbl.		856	1090
Debutanizer Gas, SCF/Bbl.		246	296
Debutanized Rexformate, Vol. %		82.9	76.8
10# R.V.P. Rexformate, Vol. %		92.3	85.0

*Debutanized
**C.R.C. Octane scale extension

Table 3

LABORATORY REXFORMING DATA
LOW NAPHTHENE FEED

Inspections	Charge	Rexformate
Gravity, °A.P.I.	59.6	47.1
F-1 Clear Octane	10.3	101.0
Naphthenes, Vol. %	12	—
Aromatics, Vol. %	3	59.2
100 Ml. Distillation		
I.B.P., °F.	254	110
5%	265	153
10	268	167
30	282	239
50	296	278
—	—	—
70	320	306
90	351	345
95	365	364
E.P., °F.	390	415
Yields		
Separator Gas, SCF/Bbl.	—	940
Debutanizer Gas, SCF/Bbl.	—	484
Debutanized Rexformate, Vol. %		68.2
10# R.V.P. Rexformate, Vol. %		74.3

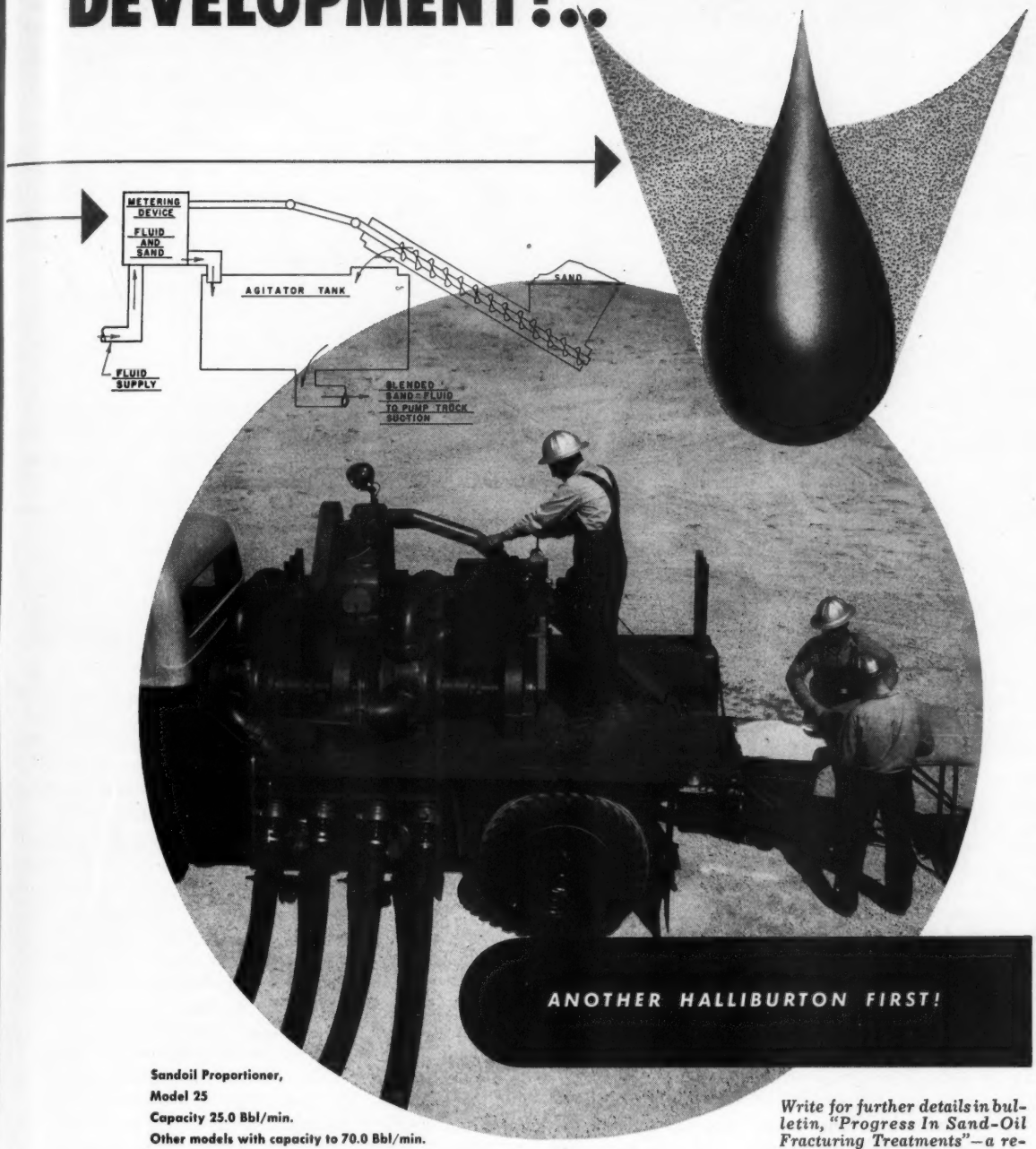
duced by improving the nature of the non-aromatics. Figure 6 gives some measure of the extent to which this is practicable at a clear octane level of 96. Here, a 10% decrease in aromatic concentration can be accomplished if the quality of the non-aromatics can be improved from 50 to 65 F-1 clear octane. This effect has been of importance in our approach to the problem of an improved catalytic reforming process.

The considerations previously discussed have led our research staff to the conviction that efficient reforming to superoctane levels can be accomplished only by selective treatment of the low octane paraffins. The process to accomplish this requires a partial conversion of such paraffins under mild conditions to maintain a proper balance between the reactions of hydrocracking and dehydrocyclization without undesirable side reactions which produce excessive quantities of gas and coke. This partial conversion of paraffins requires in turn the continuous separation and recycle of unconverted material to the reaction zone.

The application of liquid-liquid solvent extraction techniques was found to be appropriate, after consideration of alternate separation methods. It developed that by careful selection of solvent and operating conditions, it is practical to selectively dissolve all types of high octane materials, both the aromatics and the low boiling non-aromatics. At the same time the high boiling low octane components are rejected by the solvent. Figure 7 illustrates the relationships involved for a solvent which may be used to dissolve all gasoline boiling range aromatics along with the low boiling, high octane paraffins and naphthenes. The use of such a solvent permits separation of reactor effluents into a superoctane portion and a low octane stream. This latter material is then available for selective upgrading to high octane gasoline, or for special uses such as a refined jet fuel component or paraffinic solvent.

The low octane stream may be handled in a separate catalytic reforming section, however experiments in completely integrated laboratory and pilot plant units proved that recycle of this material to the catalyst in admixture with raw feed is completely practical. Such operations are characterized by low recycle ratios and high liquid

DEVELOPMENT!..



Sandoil Proportioner,
Model 25
Capacity 25.0 Bbl/min.
Other models with capacity to 70.0 Bbl/min.

Write for further details in bulletin, "Progress In Sand-Oil Fracturing Treatments"—a reprint of paper presented by Halliburton at API meeting, March, 1954.

HALLIBURTON

FRACTURING SERVICES

PERPETUAL PROGRESS IN PRODUCTION IMPROVEMENT TECHNIQUES

Table 4

PILOT PLANT REXFORMING DATA
MIDCONTINENT FEED STOCK

	Fresh Charge	Rerun Bottoms	Combined Feed	Stabilized Reactor Effluent	Low Octane Recycle	Debutanized Rexformate
Inspection Data						
Gravity, °A.P.I.	52.3	29.5	56.1	52.4	63.4	47.0
F-1 Clear Octane	33.0	—	—	76.3	41.0	97.2
Aromatics, Vol. %	9	—	—	37.5	8.5	53.5
100 Ml. Distillation						
I.B.P., °F	242	417	168	133	114	93
5%	259	431	227	172	148	109
10	264	436	241	194	165	121
30	292	—	271	245	225	173
50	316	—	298	280	266	262
—	—	—	—	—	—	—
70	346	—	332	313	300	309
90	374	—	367	366	355	367
95	384	—	376	387	378	393
E.P., °F.	415	—	395	424	420	424
Quantities, Volumes Per 100 Volumes Net Feed	101.4	1.4	144.6	125.1	44.6	80.5

Table 5

ESTIMATED INVESTMENT AND OPERATING COSTS FOR REXFORMING

Basis: 5000 BSD Midcontinent Full Boiling St. Run Gasoline* Producing 101 F-1 clear Rexformate (See Figure 1).

	Total
Erected Cost	
(Within Battery Limits)	$1,600,000
Operating Costs	
¢/bbl. Full Boiling Gasoline	
Operating Labor @ $2.75 per hour	4.0
Laboratory	1.0
Utilities	
Fuel @ 15¢/MM BTU	7.3
Power @ 0.8¢/KWH	4.0
Steam @ 30¢/M lb.	4.6
Water @ 1¢/M gal.	1.4
Catalyst	6.9
Solvent	1.7
Maintenance @ 3% of investment per year (Labor & Materials)	2.8
Insurance & Property Taxes @ 2% of investment per year	1.9
Total Operating Costs excluding Royalty, Depreciation, Administration and Overhead	35.6

*4300 BSD fresh naphtha charge to reactor section

recoveries of very high octane gasolines. The established advantages of recycle operations, with their lower conversions per pass are well known to the refining industry. The operating conditions used in Rexforming are distinctly less severe than for conventional once-through operations. The benefits to the refiner are obvious.

Discussion of Results

A substantial number of runs have been made in completely integrated Rexforming units, both on laboratory and pilot plant scale. It should be pointed out that the operation of the reforming section determines the composition of the charging stock for the extraction section, while the operation of the extraction section determines the composition of the charging stock to the reforming section. Thus, it can readily be seen that complete integration and uniform continuous operation is essential to obtaining reproducible and accurate data.

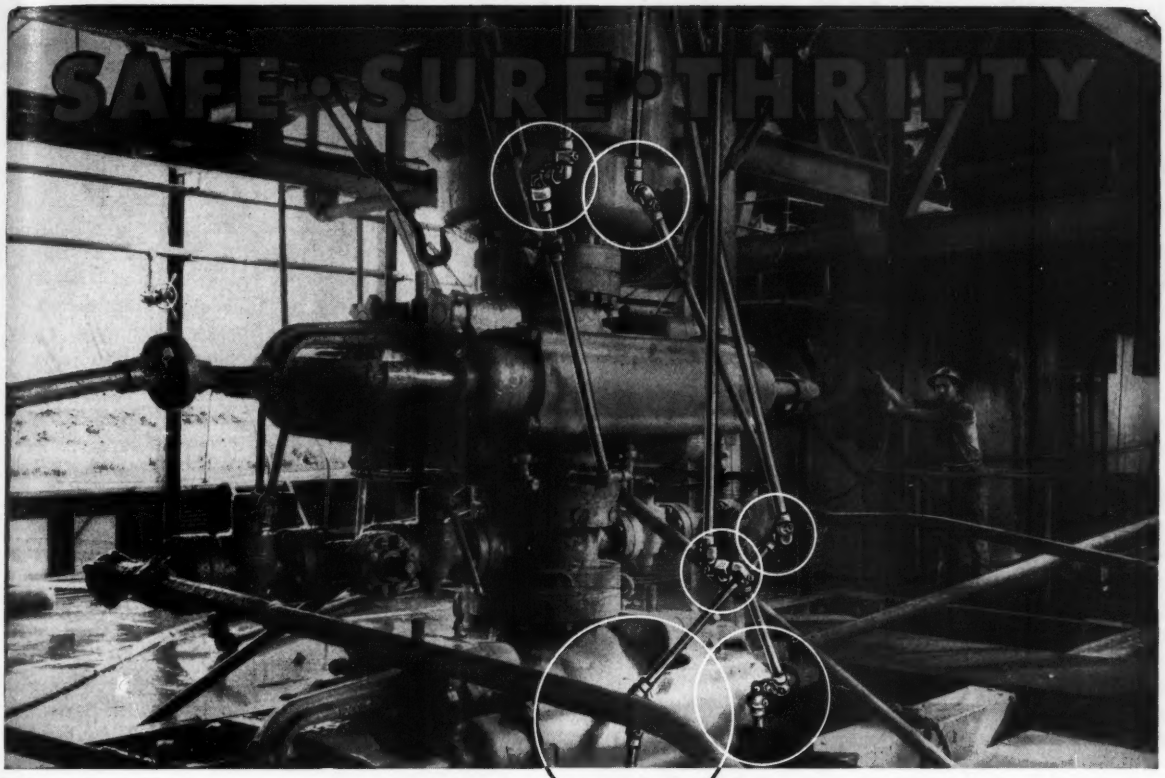
The results, shown in Table 2, were obtained in Rexforming a Midcontinent naphtha in a laboratory unit. It will be observed that the octane number range covered by these tests is from about 95 to 102 F-1 clear. The aromatic contents of the Rexformates corresponding to these octane numbers range from 56 to 77%, and, as one might expect, the lower boiling fraction contains the higher octane paraffinic components, while the higher boiling fraction is essentially completely aromatic.

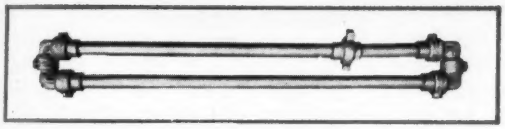
One of the most interesting features of these Rexforming runs is the relatively low severity required for the production of these octane numbers. For example, both tests in Table 2, were run at the same temperature level. This temperature was more than 50°F. lower than would be required for once-through operation to the lower product octane number shown. In addition, space velocities utilized were higher on the basis of fresh feed than those ordinarily employed for once-through operations at considerably lower octane levels. The combination of the mild processing conditions and selective extraction made it possible to attain the high octane numbers with good yields.

It is difficult to make a valid comparison in yield at 100 clear octane number between Rexforming and once-through operations, because once-through operations suffer from instability at the requisite very severe operating conditions. These also have a very adverse effect upon the yield-octane relationship. Undoubtedly, the yield differential between Rexforming and once-through operations increases with increasing octane numbers.

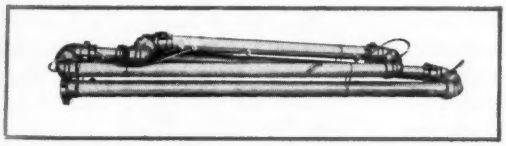
Table 3 shows the results obtained in processing a highly paraffinic naphtha. This charging stock was deliberately selected to demonstrate the versatility of Rexforming. Product of over 100 clear octane was produced from this, the highest paraffin content (85%) naphtha that we have been able to locate without going to synthetic materials. The yield of the high octane number fuel is less than that obtained from the Midcontinent naphtha, which is to be expected in view of the considerably higher paraffinicity of the charging stock.

Table 4 shows the properties of the various streams obtained in Rexforming pilot plant operation. These data were obtained on a Midcontinent naphtha feed. The most important point is the relatively low octane number of the reactor effluent, indicating that a very mild reaction severity was utilized. A 41 octane number recycle stream was separated from the reactor effluent and recycled to commingle with fresh feed. Thus, the feed to

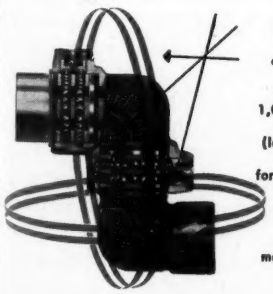




CHIKSAN High Pressure Cementing and Circulating Hose incorporates CHIKSAN forged steel swivel joints with flame-hardened ball races and high pressure type packing units. Maximum working pressure is 6,000 psi; for extra high pressure, CHIKSAN joints to 15,000 psi with maximum temperature 225° F.



CHIKSAN All-Steel Rotary Hose comes in two types — the Heavy Duty Rotary Hose for standard rigs and the All-Steel Rotary Hose for Portable Rigs. Both types of CHIKSAN Rotary Hose provide uniform strength and maximum safety.



CHIKSAN Ball Bearing Swivel Joints are The SAFE — SURE — THRIFTY Tool of the Petroleum Industry — with full 360° rotation in 1, 2, and 3 planes. Over 1,000 different types, styles and sizes from ⅜" to 12" (larger sizes on special order) have been developed for pressures and services from 28" vacuum to 15,000 psi and for temperature ranges from minus 75° F. to a plus 500° F. Packing materials have been designed for each specific service.

CHIKSAN JOINTS MEET ALL SAFETY CODE REQUIREMENTS

It's SAFE — SURE — THRIFTY to use CHIKSAN High Pressure Ball Bearing Swivel Joints and Chiksan All-Steel Hose on blow-out preventer control lines, cementing and circulating lines and rotary hose.

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For a quarter of a century CHIKSAN Swivel Joints and All-Steel Hose have met the rugged requirements of the petroleum industry. CHIKSAN products have been improved throughout the years to keep pace with the industry's increasingly exacting demands.

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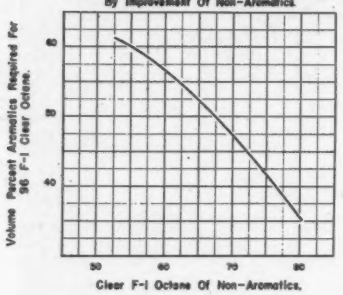
Figure 6.
Reduction In Aromatic Concentration Made Possible By Improvement Of Non-Aromatics.

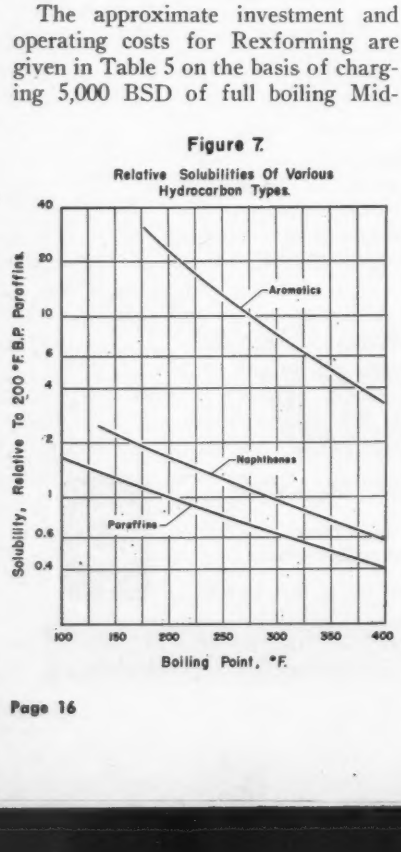


the reactor was increased by about 40%. Since a higher space velocity was used in this case, less catalyst was actually required than for conventional once-through operations. The overall result is shown in the last column, where the product is of good volatility characteristics, has a clear octane number of 97.2 and was obtained in a yield of 80.5% by volume. Although in this particular operation the low octane stream was completely recycled, all or a portion of this material may be withdrawn as a net product. Due to the facts that this stream is essentially free of such materials as olefins and sulfur compounds, and in addition contains more than 90% paraffinic hydrocarbons, it is ideally suited for inclusion in such valuable specialty products as jet fuels, which are of growing volume in refinery production schedules.

Economics of Rexforming

The approximate investment and operating costs for Rexforming are given in Table 5 on the basis of charging 5,000 BSD of full boiling Mid-continent straight-run gasoline and producing 101 F-1 clear Rexformate in a flow as outlined in Figure 1.

Figure 7.
Relative Solubilities Of Various Hydrocarbon Types.



It is thus estimated that the Rexforming process for this type of operation costs about $300.00 per barrel to install and about 36 cents per barrel to operate including the costs itemized in Table 5. These are reasonable costs when it is considered that the product is of such high quality. No valid cost comparison with established once-through operations can be made at this high octane level. It should be pointed out, however, that the increased yield from Rexforming makes this process economically attractive even at the lower octane levels at which real comparisons can be made. In some cases the economics of Rexforming can be further improved by diverting the highly paraffinic recycle to jet fuel uses.

Summary

Rexforming is a new process for the production of fuels which will satisfy the octane requirements of the most demanding cars now under development by the automobile industry.

The ability of the process to produce super quality fuels as a major proportion of the total refinery gasoline output is associated with the use of a solvent extraction technique coupled with recycle of low octane material. Such low octane components do not appear in the finished Rexformate, which is a water white gasoline of controlled volatility characteristics. Due to the mild process conditions employed, side reactions are minimized, catalyst life is extended, and overall yields are excellent at super-octane levels.

The recycle nature of the Rexforming process provides an additional process variable which frees refiners from operating limitations imposed by characteristics of their feed stocks. For instance, low naphthene feeds can be processed as conveniently as stocks of more normal naphthene concentration, as Rexforming permits much more desirable paraffin conversions than are possible in single pass operations.

A Rexforming installation utilizes in an integrated manner well established refinery unit operations. It operates at high space velocities, and catalyst requirements are about the same as those needed for single pass operations to much lower severities. Units can be readily installed utilizing equipment from existing Platformers. For the same fresh feed rate no additional catalyst is required, some additional heat exchange equipment must be added, and the solvent extraction section is required.

It is estimated that a Rexforming installation of the type described in this paper will cost about $300.00 per barrel to build and about 36 cents per barrel to operate excluding royalty, depreciation, administration and overhead costs. Such a Rexforming unit will permit gasoline productions of any needed octane rating, and has in addition the flexibility for producing paraffinic specialty products.

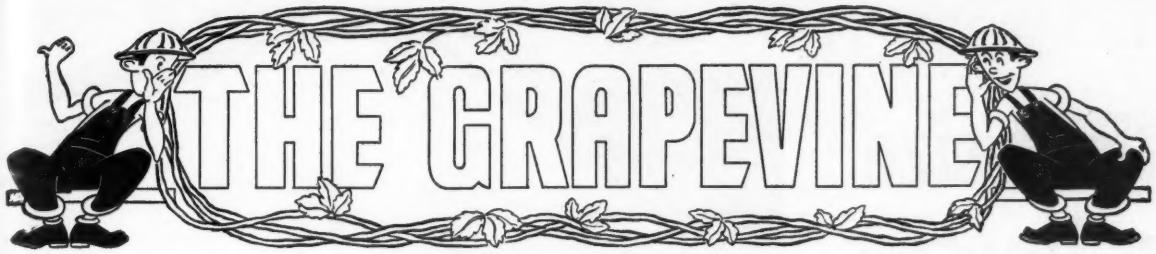
Presented at the
FORTY-THIRD ANNUAL MEETING
of the
WESTERN PETROLEUM REFINERS ASSOCIATION
March 29, 1955
San Antonio, Texas

Round Mountain Producers Retired

Seven old producers in the Round Mountain field have outlived their usefulness and have been abandoned. They were Kelly No. 1, No. 2 and No. 3 on Section 6-28s-29e, and Coffee No. 1 and No. 2 on Section 1-28s-28e, and Bell No. 1 and No. 2 on Section 12-28s-26e.

Belgian Anticline Adds New Gas Pool

Pacific Western Oil Corporation has added a new gas pool in the Belgian Anticline area of Kern County with its Anderson No. 63A test on Section 23-30s-21e. The project, which was taken down on contract by Clyde Hall Drilling Company, started off from 6813 feet at the rate of 3,150,000 cubic feet of gas daily from the interval of 6255-6195 feet. What is being produced is coming from the Third Point of Rocks zone, a sand that tested wet in Ohio Oil Company's F. E. Smith Government No. 5, situated a short distance from the new pool opener. The zone exposed also was wet in Honolulu Oil's well in a northwesterly direction and Shell Oil's project to the southeast.



By RICHARD SNEDDON

Multi-Monikered Caledonian

Dave Conklin, the E. I. DuPont petroleum chemicals division sales chief from Wilmington, Delaware, where we once spent a delightful two years, was recently hosted by the Petroleum Press Club of Los Angeles and, as we knew all the time he would, came out quicker than the proverbial wink with prompt and lucid answers to even the most perplexing questions, between questions giving out with much pertinent and altogether worthwhile information. While you are catching your breath after that sentence, let us make known that we became pretty thoroughly acquainted with Dave when he was holding down a berth on the west coast some years ago and found that he was a right good chap to know. Being of Caledonian descent, it was obvious from the beginning, of course, that he couldn't be anything but OK and that's just the way it turned out. We discovered then that his complete moniker was David Hugh McNeil Conklin and that on this account he had frequently been mistaken for a golf foursome.

The Depths of Gratitude

For his special benefit we recalled a Gaelic fable that has always appealed to us, as follows and to wit: Some time ago a small boy fell off a pier at Long Beach and was in grave danger of drowning when a man, fully clad, dived into the ocean and after a fierce struggle succeeded in dragging him out on to the sands where in the meantime the usual concourse of curious ones had gathered to watch the proceedings. The gallant rescuer had to give the boy first aid to bring him back to consciousness and, that accomplished, he modestly backed off through the crowd and was on his way home to change into some dry clothes when an old Scotsman ran up to him and asked somewhat breathlessly, "Say! Arrrre you the fella that rrrescued ourrr wee Johnny frrom drrowndin?" "Yes I am," the hero admitted, whereupon the irate daddy barked petulantly, "Weel, whit the divil did ye do wi' his hat?"

Of Torsos and Such

The late mails bring news of Ox "The Body" Morgan, Falcon Products higher-up, who at the time of writing was in Caracas, Venezuela, and expecting any minute to take off for Trinidad. The weather was a bit threatening but Ox was undismayed. It may not be generally known but in his younger days the noted behemoth hardened himself to all meteorological eventualities by opening his shirt front to every summer storm and permitting the lightning bolts to strike his bare chest time and time again while he laughed gleefully in the very teeth of the gale. By a strange coincidence, on the same day that we heard from Ox we ran into his only structural rival, that rugged individualist with the rhinocerian torso, Frank Champion, now a resident of the Lone Star State, but a legendary character wherever oil men foregather. Frank is an ex-associate of Glenn McCarthy and has had more adventure than Robinson Crusoe, Benvenuto Cellini, and Don Quixote all tied together.

News from Costa Rica

Another petrolic Gulliver to whom we are indebted for an interesting communique is Frank Leonis, the dark haired lad from Security Engineering Corporation, who writes from San Jose, Costa Rica. His card shows a picture of the Paseo Colon which links the city with the Sabanas Airport and it appears to be a wide, thoroughly modern boulevard, as up-to-date, indeed, as anything one would find in the United States. By the way, we must check with Peg Whealton, our linguistic authority to find out if Paseo Colon means what we scarcely dare to think it does. Returning to Frank, however, after doing Mexico and Central America for some six weeks, he was heading for Panama at the end of March and will no doubt be back in the local swim by the time this appears in print. Speaking of local swims, wonder if Frank did any skin diving south of the border. He is mighty good at that sort of thing——used to go down looking for chests of doubloons from wrecked Spanish galleons but so far hasn't found anything more exciting than a reluctant abalone.

We Get Taken but Plenty

The mention of Peg Whealton reminds us of a frightening experience we had a short time ago at the Petroleum Club. In a moment of madness one otherwise lovely noontime we became entangled in a domino donnybrook from which we barely escaped by the epidermis of our dentures — complete upper and partial lower. In this melee we found ourself paired with one, Harold K. Armstrong, a consulting chap known popularly as "Army" and a really astute tile tosser, against two lads who, dominowise, are more deadly than the hemlock dropwort or oxypolis rigidior as we scientific Johnnies call it. We hadn't intended to disclose the sordid details of this debacle but for

"Pint-size" refineries

help us keep gasoline prices low

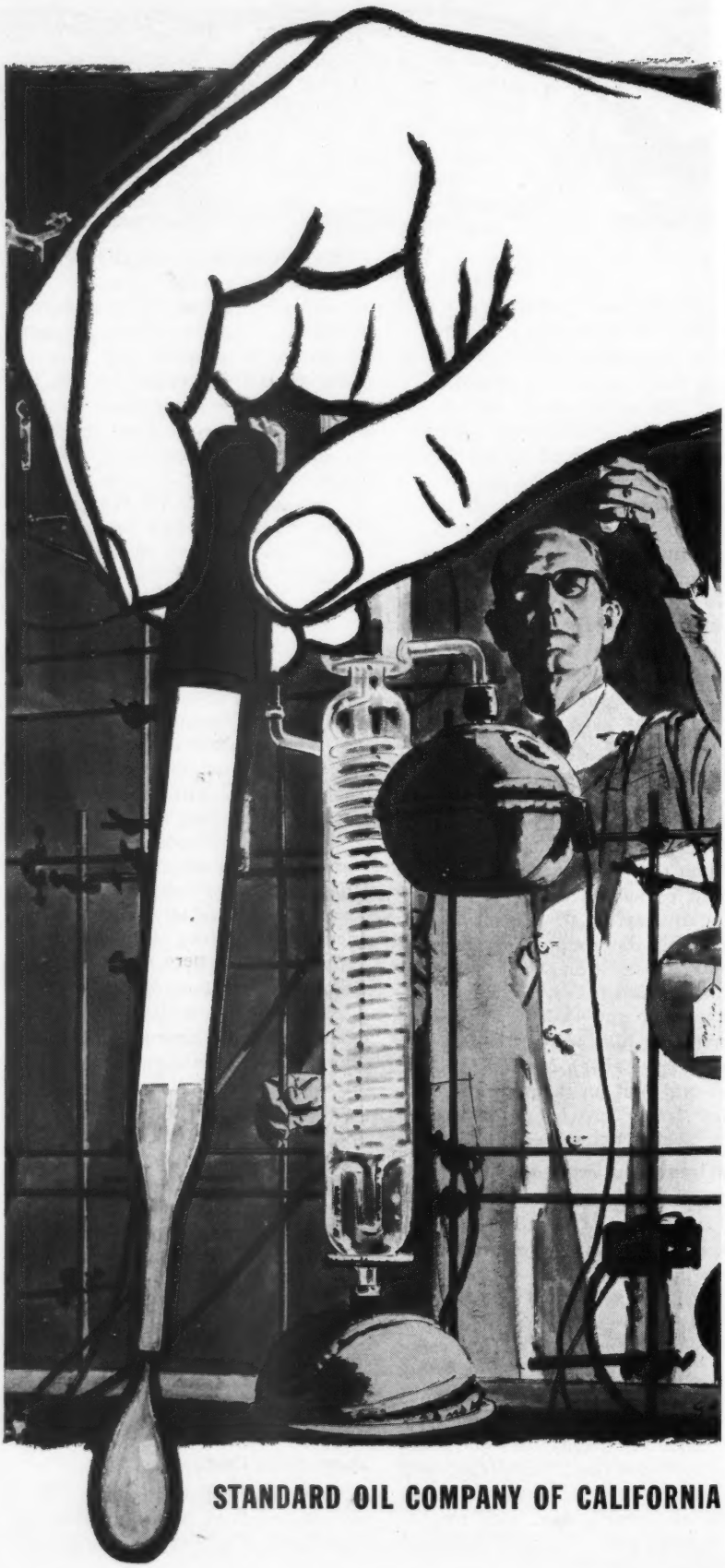
Folks who like a bargain don't have to look any farther than the gas tanks of their cars. For despite a steady increase in quality, gasoline prices have remained low—and Standard Oil Company of California's table-top refineries are one good reason why.

They are pint-size laboratory pilot plants that have enabled our scientists to develop cost-cutting manufacturing methods for each new gasoline before we produce it. With the aid of these rubber and glass forerunners of multi-million gallon refineries, we've worked with car manufacturers to perfect *balanced* gasolines designed to bring out more efficiency, economy from today's higher compression engines.

We've learned how to squeeze more gasoline from each barrel of crude; and—most important—we've found ways to manufacture increasingly better gas at consistently low prices. Today's gasoline, for example, is 50% better than motor fuels of 1925, yet costs just a few pennies more.

The combination of research and competition has held gasoline prices down so effectively that they've advanced only 17% (excluding taxes) since 1925 while general living costs have gone up 52%. So, even though Standard's pint-size refineries make gasoline by the drop, they have a powerful influence on your motoring... are one reason why Standard products give you a longer run for your money.

Standard plans ahead to serve you better

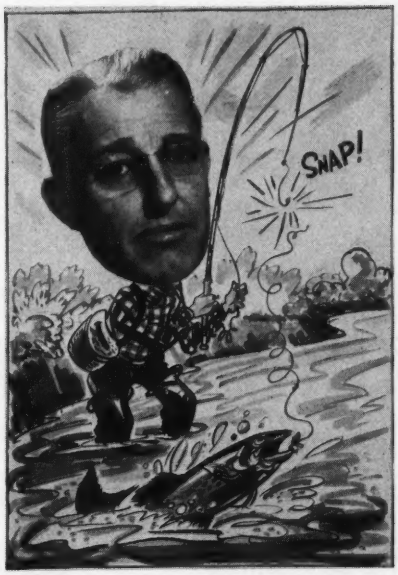


STANDARD OIL COMPANY OF CALIFORNIA

OIL MAN TURNS MOVIE DIRECTOR

C. C. "Charley" Gandaubert, general superintendent of field operations for the House of the Flying Horse, is a tall chap with a plentiful crop of gray hair that gives him what the society writers call a "distingue" look. He is a native Californian, having been born in the historic village of Santa Barbara. He began working in the oil fields for the Pan American Petroleum Company in 1917 and joined General Petroleum Corporation as a roustabout some three years bies, baseball, tennis, and golf, and he later. At that time he listed as his hobwas more than normally proficient at all of them, but with the encroachment of time he gradually abandoned these somewhat unrewarding pursuits and, as the accompanying diagram shows, he is now an enthusiastic addict of fishing and, as it doesn't show, he is also an enthusiastic hunter. Indeed, we have heard a lot of mighty interesting stories of the prowess he exhibited on several visits to the Abercrombie estates on the Gulf Coast, near Corpus Christi, Texas, where he vied with such noted nimrods as Doug Graham, Paul Huggins Ed Lorraine, and Jeff Musolf, in bringing down deer, duck, dove, and wild turkey.

Businesswise, Charley has had a very successful career during the 35 years



that he has spent with General Petroleum Corporation. He has progressed through many jobs to his present elevated post and there is little that he hasn't tackled in the way of drilling and production operations. As a matter of fact, he has become pretty much the expert on the Company's field development and is invariably called in for advice and counselling when drilling or production methods are the subject of executive discussion. He has recently even been acting as motion picture director on several productions that have had their locale on the company property, and altogether he is an extremely busy person.

Nonetheless, he can find time for all sorts of civic enterprises and he has always done a heavy stint in the various industry organizations to which he belongs. He was chairman of the Los Angeles Basin API production group in 1951, and is presently active in the Petroleum Production Pioneers, and in Rotary. About the time this appears in print, Charley will probably be down in Mazatlan, Acapulco, or La Paz, aboard George McCarthy's cruiser, angling for the oversize ones. Hooking a marlin is no new sensation, however, over the years he has adventured down the Mexican coast with Woody Kreiger. Free Fairfield, and other hotshot fishermen, and has caught his fair share of the big fellows that walk on the top of the water. And, if you've caught the idea by now that Charley is an all-around popular sort of a guy—well, we've made our objective!

---

the protection of other gullibles we feel that the facts should be laid bare, so here goes! First, be it known that the duo to which we found ourselves opposed was made up of the Peg Whealton aforesaid, and Bill Geis, who has just recently returned from a world tour that we are told was completely subsidized by domino winnings.

Oh the Horror of it All!

In any case, what they did to our side was one of the most heart rending bits of rapacity that has ever been visited on innocent people in the name of pastime! Before we even had time to count our dominoes, they had driven us deep into the boneyard, or **huesomenta,** again and again. Meantime, they themselves pegged swiftly and often in increments far beyond the limits of decency, and soon had galloped clear around the board, leaving us bleeding from every pore and writhing in a very agony of frustration away back behind skunk corner. They won the first game long before the soup had been served by over 120 points and some 8 or 9 debasing remarks. By dessert time Army and yours truly were flatter than a platter and sobbing bitterly into our **blanc manges.** But we can't go on. It was, indeed, a pitiful situation, if we may say so, and we'd like to see anyone try to stop us.

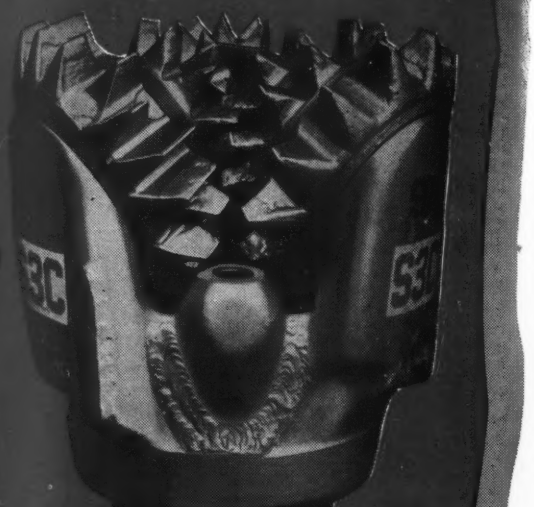
Bits from Alberta

From a different "airt," as the Gaels say, comes a message from John Flanagan, Canadian manager for Johnston Testers, Ltd., now anchored in our old stamping ground, Calgary, Alberta. That's where we installed and operated a laboratory for Western Canada Flour Mills, makers of Purity Flour, back about 1913, and lived for two years in a mansion out at Bowness Park in which we engaged the local folk every Saturday night in a season of revelry that made the Mardi Gras look like a Sunday School picnic. Johnny tells us that the weather is "rather chilly." The day he wrote it was 22 degrees below zero. In reply we admonished him to cheer up because the winter never lasts longer than eleven months up there. If the weather was cold, however, he found the people warm and hospitable and was enjoying his adventure no end regardless of the temperature. Among the gallivanting Californians he ran into in the first few days of his arrival were Keith Bright, the collegiate looking Ken Corporation chap; O. I. "Tork" Torkelsen, the British American fashion plate; Tommy Prehoda, high ranker of Pacific Petroleum, Ltd.; Bill Roper, noted consultant and domino sharpie; Ed Gearke, former Baash-Ross attache now with Trident Drilling Company; Warren Craddock, Pacific Western's general superintendent; and a trio we can't affiliate at the moment—Al Bowie, Merv Boggs, and John Sinclair. We will no doubt later find that we have known all about these lads since the War of Independence, but can we help it if the old brain is beginning to soften from prolonged disuse. Well, then!

Sod Heaving in the Dim Past

For those who are not too well versed on the history of divot lofting, we ran into an interesting piece of swardlore recently in a Scottish magazine that should be most illuminating. It was about the oldest golf club in existence, namely, the Honorable Company of Gentlemen Golfers who do their turf slashing at the Muirfield Links in Edinburgh. This august institution

GLOBE'S *New* "3 CUTTER" JET ROCK BIT



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which, incidentally, was the scene of the British Amateur Championship last year, was organized well over 200 years ago and is still going strong. However, it is only fair to mention that Ed Bedford, the Western Gulf Oil Company's top land man, played the course last summer, and since that time we understand it hasn't looked quite the same.

What's in a Name?

But what we really wanted to tell about was that the No. 1 player of this elevated and exclusive coterie is determined annually in a membership tournament and the winner has the distinction of being recorded as the holder of the Silver Club. There is a really truly silver club, emblematic of the championship but the lucky one doesn't actually take possession of it. Instead he has his name inscribed on a silver golf ball which is then attached to the famed stick. In 1827, much to the disgust of the members, the Silver Club was won by a Frenchman, Samuel Messieux, who was teaching in the city, but the very idea of a Frenchman beating the Scots at their national game was so abhorrent to everyone concerned that his name was changed to McGrieux. And that's how it appeared on the Silver Club until 1950 when the Board of Governors or whatever is the ruling body at Muirfield, corrected the record and Sam Messieux finally was given the credit that had been denied to him for 123 years. Oh, the dastardliness of national pride!

Fete for Turkish Rep.

We had the privilege one evening not too long ago of sitting in on a neat little Jonathan Club dinner, hosted by Ed Trout, the Lufkin Foundry & Machine Company executive, and honoring Ferdie Ozman, Turkish Petroleum Corporation representative here. And, before we go further, may we say unequivocally and unhesitatingly that this Ferdie is real people. He speaks excellent American and can so pleasingly and completely accommodate himself to any company or environment, that there remains no consciousness of distinction wherever he may happen to be. He also has a good sense of humor, is easy to know, and in every sense is an elegant choice for the high responsibilities to which he has been assigned by his home land.

Van Wingen Movie Enterprises

A standout feature of this smug gathering, incidentally, was the showing of a color motion picture by Nick Van Wingen, the much traveled and well informed consultant, who has foraged about the Turkish Republic and many other interesting countries on the far side of the Atlantic. Unfortunately for Nick he was much too well known by his audience and he was not only accused of having taken the picture from the back of a runaway camel but was the victim of a constant barrage of wisecracks and quips that we have noted carefully and hope some day to sell to George Gobel.

More Haste Less Speed

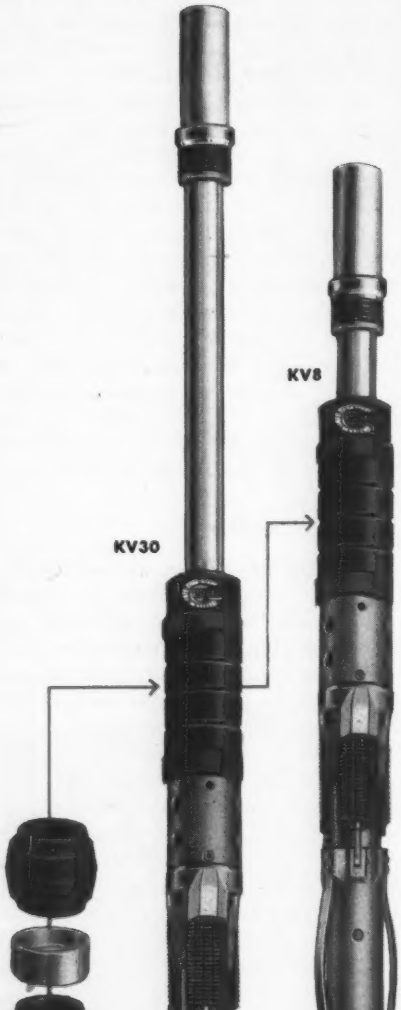
Ed Trout was accompanied to the seance by his ubiquitous bodyguard, Al "Dutch" Zwerneman, whom we have been meeting in divers rathskellers at frequent intervals over the past 20 years more or less. After the party, this pair of inseparables were leaving for San Francisco, and as plane time approached, Dutch began to generate internal noises like a rampant Geiger counter, meantime dashing hither and thither and making innumerable phone calls from the outside to Ed Trout, while the latter continued to sip his grasshopper in placid and exasperating unconcern. (PS: We learned later that they just barely made the plane with a scant forty minutes to spare.) Other guests who attended were a group of lads from the Ralph M. Parsons Company, all of whom had some share in the construction of the Turkish refinery, including Bill Van Ness, contract administrator; C. N. "Nels" O'Neal in charge of purchasing; Ted Getzler, senior engineer for the Parsons concern; and Jim Moon, Pacific Coast industrial relations manager, who simultaneously performs as materials expediter. Also present were Lufkin's ambassador of amiability, Vic Fawcett, looking practically naked with no violin; Bob Spaulding, West Coast Service Department head for the same who has no bad habits so doesn't play the violin; and Hal Coops, the photogenic photographer, who thumps the Steinway with rare abandon and amazing results. Altogether this was a pleasant conventicle, brimming over with typical Ed Trout magnanimity. We enjoyed that as we always do and we found it a very worthwhile concession to add Ferdie Ozman to the roster of our acquaintances.

The Look-Box

By way of last minute roundup, congratulations to Russ Green on his elevation to an even higher pinnacle of executive eminence! Congratulations also to Elmer MacGeorge, the Ohio Oil Company chap, on his recovery from a nasty operation that had him pinned to the mat for a spell! And, as for Harry Cleeland, the Oil Well Supply Company sales genius, we wish him all he could wish himself as he goes into what is laughingly called retirement. Here unquestionably is one of the youngest retirees in captivity. He has more hair on his upper lip than most men have on their heads at his age, and the copious crop that he carries on the roof is as black as coal and stronger than bailing wire. To top it all he has both the energy and appearance of a rather young looking forty-year oldster. A fond farewell to Ed Hamner, the Humble executive who mounts another rung of the success ladder, one this time that takes him back to Texas. Ed is one of the best. He has made a lot of friends during his stay out here on the west coast. They are going to miss his quiet humor and his intriguing southern drawl. He will be succeeded on the Petroleum Club board of directors by Tom Wallace, the Western Gulf Oil Company vice president, and by all means one of our top citizens.

Durable and Dependable

GUIBERSON'S *KV* PACKERS



Two-piece G2 rubbers with metal spacer are interchangeable and optional at no extra cost. One-piece sleeve rubber shown on packers furnished unless otherwise specified.

Here is the retrievable packer that operators everywhere count on for rugged durability and dependable performance. The KV Packer is designed for wells up to 12,000 feet deep. Construction is as simple as it is tough and husky — price is reasonable. In short, the KV Packer gives you more packer for the money — quick setting, easy pulling, ample bypass and positive seal.

- Made as the KV30 with 30″ valve stroke or the KV8 with 8″ valve stroke for standard below-packer circulation. Available in casing sizes, 4½″ through 9⅝″.
- Valve has two independent sealing elements, a tapered metal valve and seat and a set of oil-resistant seal rings, affording double-sealed protection.
- Choice of two types of rubbers, both made of special oil and gas resistant compound. Will not vulcanize to casing — recovers original shape when released.
- Easy operating jay-hook type latch with heat treated friction springs.

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Rocky Mountain NEWS

Colorado—Idaho—Montana—New Mexico—Utah—Wyoming—Western Canada

General

The biggest and, in the opinion of the planners, the best program in its history, has been arranged for the American Petroleum Institute's Rocky Mountain district spring meeting in Casper. An outstanding oil executive will outline the challenge ahead for the oil industry while an atomic expert will forecast the role of petroleum and atomic energy in future energy requirements. The production men will gather in Casper April 12-15.

For the first time in the district's history three full days will be given to the reading of papers which will touch on every facet of production problems in this far flung oil domain. The first day of the four-day session will go to committee meetings.

A. L. Solliday, executive vice president of the Stanolind Oil and Gas Co., will come from Tulsa to present "The Challenge to the Oil Industry," the convention's principal speech. As another main speaker Allan C. Johnson, manager of the Idaho operations office of the Atomic Energy Commission will discuss "Uranium and Petroleum—an Industrial Team."

In addition there will be 14 technical papers delivered during the meeting. H. B. (Hi) Gernert, Trigood Oil Co., Casper, will preside over the sessions as district chairman.

The general arrangements chairman has been John J. (Barney) Oldham, R. L. Manning Co., Casper. R. M. Churchwell, the Ohio Oil Co., Casper, has been program chairman. Other chairmen include: Walter Forbes, Ken Corp., entertainment; Homer B. Brown Jr., Mud Control Laboratories, registration, with R. L. Armstrong, Oil Well Supply, co-chairman; W. W. Butler, the Ohio Oil Co., meeting rooms arrangements; and George Goodin, Petroleum Information, publicity.

Southern California Petroleum Corp. has purchased Mesa Drilling Co., subsidiary of the Great Basins Petroleum Co., C. G. Glasscock, Jr., Denver, Great Basins president has announced. Camay Drilling Co., a wholly-owned subsidiary will take over operation of Mesa's five rigs in the Rocky Mountains. Southern California Petroleum which has not operated in the Rockies before, is also making a working interest agreement with Great Basins for extensive exploration in the Rockies. Raymond O. Turner, vice-president and general manager for Camay Drilling, which runs eight rigs in California as well as rigs in Egypt, will direct operations for Mesa Drilling Co.

Canada

Inability of the company and the Dominion government of Canada to agree to financing terms has postponed, possibly halted, proposed construction of the Trans-Canada pipeline. The 2,200-mile line would have been the longest in the world, connecting the gas fields of Alberta with the eastern metropolitan centers of Ontario.

The company was seeking government financial underwriting for the $300,000,000 project. They could make no arrangements, company officials have announced, that didn't place the company under the control of a government agency for the first several years of operation. Opposition of Canadian Gulf Co., a subsidiary of the Gulf Oil Corp., and whose reserves at Pincher Creek in southwestern Alberta would have furnished the line one-third of its capacity to selling to a government-controlled line was reported a factor in the decision. Trans-Canada will seek extension to the various permits it now holds and will seek private financing.

Just a week before the break in financing negotiations Trans-Canada had made the first of its gas purchase contracts. The daily 125,000,000 cubic feet which Trans-Canada had contracted was at a well-head price of ten cents per thousand. The supply would have met Trans-Canada's first year commitments to Winnipeg and the Twin Cities. The postponement of construction will not affect these contracts.

A gas flow of 189,000,000 cubic feet of gas per day has been registered for an Alberta test. It is thought that this is a record gas flow for a Canadian well. The test was drilled by Mid-Western Industries Gas Co. on the Alexander Indian reserve, 12 miles west of Morinville. The producing horizon is the basal Quartz tested three times in the interval 3810-3840 feet. Mid-Western is now drilling a third gas well on the reservation. Earlier it drilled a 102,000,000 cubic foot per day well near Fort Saskatchewan. The flow exceeds the 150,000,000 cubic feet per day which have been recorded in the famous gas field at Pincher Creek but a Mid-Western engineer attributes the bigger flow to heavier shooting.

A development program to define the prolific Mississippian production of the Sundre-Westward Ho area of southwestern Alberta will be undertaken soon. The Westward Ho discovery was recently completed for an initial of 1002 barrels of 32 gravity oil. The Home-Federated group is undertaking the development with locations for two step-outs. The Sundre discovery, seven miles northwest of Westward Ho, flowed 2808 barrels per day at its recent completion.

G.P. purchasing man Rod Pedersen is shown working out manufacturing details of tank truck grounding plugs with Bill Reed of Reed Engineering, a small machine shop in Los Angeles.

What does it take to run an oil company?

There's more to an oil company than exploration, production, refining and marketing — much more.

Take the Purchasing Department, for example.

At General Petroleum, the men of the Purchasing Department combine many talents in their daily job of buying everything from precision refinery parts and tank trucks to plain nuts and bolts. The purchasing agent, as the link between his company and scores of suppliers and manufacturers must be part engineer, part cost-accountant, part public relations man.

It's an important job, but one that clearly points up the basic inter-dependence of business upon many other businesses — large and small.

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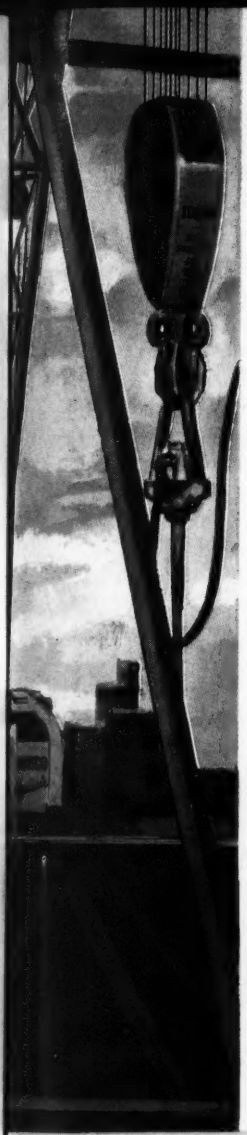

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Montana

Seven miles northwest of the northernmost field along the Cedar Creek Anticline, Gulf Oil Corp. has set pipe to test a rank wildcat. The No. 1 Schwarz, Dawson County, was drilled to total depth 10,624 feet in the Ordovician. Cores in the Red River formation, logged at 19,295 feet, recovered dolomite and limestone with oil stain on the fractures.

Shell Oil Co. has recovered oil at a Mission Canyon test on the Cedar Creek Anticline. Their No. 33X-21, first test on the newly unitized Gas City Unit, Dawson County, has recovered 1400 feet of a gassy, slightly muddy, 33 gravity oil. The Mission Canyon was tested in the interval 7557-7590 feet. A second test in the Mission Canyon in the interval 7603-7624 feet recovered 560 feet of slightly watery gassy oil mud. There were also shows in the B zone of the Charles.

A 20-25 test exploration program for the Montana portion of the Powder River Basin will be initiated this year. El Paso Natural Gas Co. is joining George J. Greer Trustee in an agreement for development of Greer-held acreage in the basin. The Greer discovery of gas in the Pumpkin Creek area of Powder River County late last year developed interest in this basin. Much of the Greer holdings are Northern Pacific acreage.

A new pay zone in the Northwest Sumatra field of Rosebud County has been established at the McAlester Fuel No. 4 NPRR. McAlester is completing in the B zone of the Amsden-Heath sand although a new pay discovery was made by a recovery of 46 feet of saturated sand in the A zone and a drill stem test recovered 900 feet of free oil. McAlester will drilled a twin 100 feet southwest to be completed in the A zone. There is some confusion in nomenclature in the field. Some operators identify the sands as Amsden although more have named them Heath.

The world's first fluid coking unit was recently dedicated at the Billings refinery of the Carter Oil Co. The 11-story, 196-foot unit introduces a revolutionary technique in the refinery which will employ residual oil as the stock for making gasoline and heating oil stocks. A by-product will be petroleum coke which can be utilized in the steel and aluminum industries. The unit will add flexibility to Carter's refinery which processes Montana crude and crude from the Big Horn basin of Wyoming. The residual oil is broken into the higher fractions by contact with a swirling mass of white-hot "fluid coke," a solid which flows like a liquid under high temperatures. The unit will add 76,000 gallons per day to the plant's gasoline capacity. The charge is 3600 barrels per day.

North Dakota

Two recent acreage sales in western North Dakota have reflected continuing interest in the Tioga area. In a recent school land sale $75 per acre was the top bid and $5.50 was the average bid. The Bank of North Dakota recently offered 11,000 acres. It sold approximately 7000 acres commanding $62.50 per acre as the top bid paid by Williston Basin Development Co. for eight acres in the southwest corner of the Tioga field. Average price at the bank sale was $4.32 per acre.

A 10,000 foot Mission Canyon test has been located for Billings County. Texas Co. will drill the test 26 miles north of the Fryburg field which produces in the Mission Canyon and the Heath. It is four miles north of a dry hole drilled to total depth 13,870 feet by Stanolind Oil and Gas Co. in 1954. In this well the Mission Canyon, encountered at 9594 feet tested salt water with a rainbow of oil.

South Dakota

South Dakota, which has commercial production in one field, is back in the exploration news. Shell Oil Co. and Carter Oil Co. have an apparent Red River (Ordovician) discovery at No. 1 Hansen and Clarkson, eight miles southeast of the state's only production at Buffalo, Harding County. In a test of the upper Red River the operators recovered 92 feet of gas muddy oil. A second test in the lower Red River recovered 2010 feet of slightly muddy water flecked with oil. The apparent discovery is along the line of the projected axis of the Cedar Creek Anticline where a number of major fields in the Montana portion of the Williston Basin have been discovered.

Wyoming

Exploration in Wyoming has been at a very slow pace in the past several weeks. Severe and nasty weather late in the winter is thought to be holding back the staking of wildcat tests. Among the wildcats recently located is a Tensleep test which Houston Oil Co. of Texas is now drilling on the outskirts of Powder River, a small community in central Natrona County. The No. 1 Govt. will test the Tensleep expected at about 5000 feet. The acreage will be unitized and the test will become the first test of the Clark Ranch Unit. It is five miles northwest of shutin production at Pine Mountain, which produces from the Tensleep encountered there at about 1760 feet.

The Laramie Basin in Albany County has been the locale of a small but fairly steady exploration program undertaken by several different operators this winter. The latest test to be staked there is a Tensleep endeavor projected by Mississippi River Fuel Corp. at No. 1 UPRR. It is southeast of small production at Big Hollow. The test site is on the Laramie Plains 15 miles west and slightly south of the campus city of Laramie.

Goshen County has promoted a small bit of activity. Federal acreage there has created the most demand in recently filings at the federal land office in Cheyenne. After many attempts, oil production was established earlier this year by F. A. Anderson just south of the county seat at Torrington. The discovery, on the Torrington Municipal Airport was on acreage farmed out by the Chicago Corp. which is now taking its own hand in the exploration. It has staked No. 1 Van Mark as the discovery confirmation. True and Brown — William Delaney, Jr. and M. T. Townsend are drilling a J sand test at No. 1 Smith six miles northeast of the discovery. Goshen County is in the northwest corner of the Denver Julesburg Basin. The Wyoming portion of the basin has not shared so far in the innumerable successes obtained in the western Nebraska and

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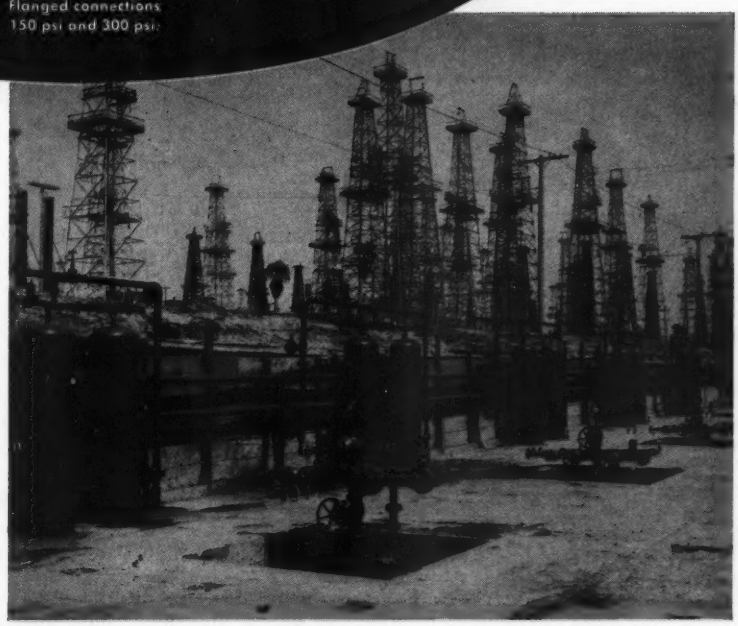

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Colorado portions of the basins in the past two years.

Notable failures recently were included. Gulf Oil Corp.'s abandonment of its Ash Creek sand test in Sheridan County. The No. 1 Carter was ten miles west of production in the Ash Creek sand at the South Ash field, whose discovery was one of the achievements of Shell Oil Co.'s 1954 drilling program. Total depth was 5000 feet in the Ash Creek sand, a near equivalent of the Shannon which produces in many fields on the Powder River Basin's western flank.

On the eastern side of the basin Black Hills Drilling has abandoned No. 1 B-Govt. Davis after the Newcastle sand tested water. Two miles east their apparent Newcastle discovery at No. 1-A Crawford is shut down for weather. The apparent discovery has been undergoing tests following a recovery of 90 feet of oil from the Newcastle. Black Hills has drilled three more or less contiguous tests in the Bertha area of Campbell County, a rank wildcat area.

Nebraska

British-American Oil Producing Co. is swabbing at No. 1 Juelfs where oil has been recovered at this test in a comparatively little drilled area of Cheyenne County. A drill stem test of the J sand interval 5293-5296 recovered 330 feet of oil and 20 ft. mud cut oil. A 17-hour swab has recovered 40 barrels of load oil and 70 barrels of new with a trace of water.

Colorado

Gulf Oil Corp. encountered gas which flowed at a rate of 1,262,000 while drilling the surface hole at No. 1 Mulrooney, Mesa County. The gas in the scheduled 7500 foot Entrada test was encountered at 429 feet. The show was possibly in the Wasatch. It is Gulf's first test in the recently unitized Coon Hollow Unit, 19 miles east of a recent gas discovery at Hunter's Canyon.

Dakota production at the Battleship field, Jackson County, has been confirmed by the No. 2. Dwinell. Lion Oil Co.'s No. 1 Dwinell tested oil in both the Dakota and the Lakota. It was completed initially in 1954 in the Dakota producing at 195 barrels per oil. It was recently recompleted in the Lakota and is now producing 500 barrels per day. The No. 2 recovered oil in the Dakota interval 4820-4860 feet. The field is in the North Park region of north central Colorado.

The Leader field of Adams County has been closed down for six months. The Colorado Oil and Gas Conservation Commission ordered the closing. Tests will be conducted during the six months but another hearing will have to be held before production will be permitted. The producing horizon is the J sand which with the D sand, are the prevalent producers in the Denver Julesburg Basin.

Utah

Shell Oil Co. has tested a flow of oil at the rate of 560 barrels per day with gas at 9,500,000 cubic feet at its North Boundary Butte discovery in San Juan County, No. 1 North Boundary Butte. The production is from the Pennsylvanian age Paradox formation. Gravity is reported as 41.5.

Modco Petroleum has reported a recovery of oil measured at 3600 barrels per day in the Cane Creek area of Grand County. The Paradox is also reported as the producing horizon with tests conducted in the interval 6730-6760 feet.

BJ Tong Pull-Back Automatically Re-Positions Tong for Take-Up

Byron Jackson Co. announces a rugged rubber Tong Pull-Back (Code: Tugger) for use with rotary drill pipe and casing tongs which automatically re-positions the tong for another take-up, thus saving valuable time and labor for working crews.

The tong pull-back acts as a rubber spring and only has to be stretched slightly for proper operation. The special rubber used has very high elasticity and strength. According to tests, the tugger has an elasticity rating 3 times its normal length and a 1450 lb. strength test. Weight is 2½ lbs.

The BJ Tong Pull-Back is easily installed on the line between the tong arm and derrick leg or back-up post.

Further information and details are available from: Byron Jackson Co., Oil Tool Division, P. O. Box 2017, Terminal Annex, Los Angeles 54, California.

New Bulletin by McCullough

A new four-page, 2-color, illustrated bulletin, No. 203, on improved McCullough M-3 Bullet Perforators and new Ogival Bullets has just been released by the McCullough Tool Company.

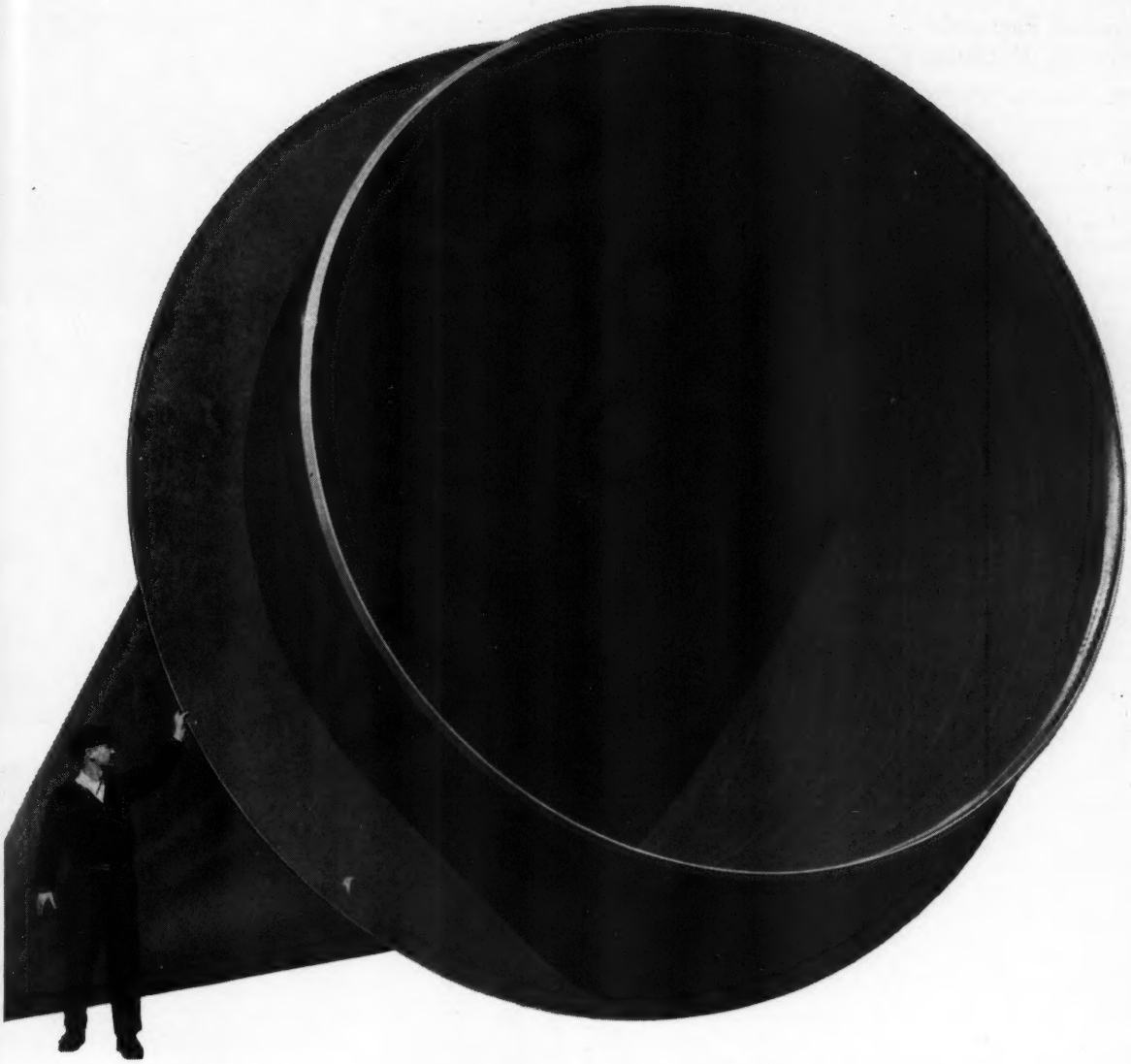
This new literature describes recent improvements in M-3 Bullet Perforator design and introduces the new, deeper penetrating Ogival Bullets. It gives specific examples of increased firing power and deeper penetration as experienced in competitive tests. Complete details as to advantages, general characteristics, sizes, etc. are also given.

Copies of Bulletin No. 203 are available on request by writing to McCullough Tool Company, 5820 South Alameda Street, Los Angeles 58, California.

After residing at Lost Hills in Kern County for 45 years, Oil Man Jack Brown has moved to his new home in the Twin Lakes district of Santa Cruz. Brown, who is retiring from oil field work, has just wound up 33 years with Universal Consolidated Oil Company in the Lost Hills producing area. He entered the oil industry some 36 years ago. He came to Lost Hills in 1909.

The Doheny boys of Beverly Hills have entered their 35-foot ketch, Sea Belle, in the July 4 Transpacific Yacht Race from Los Angeles to Honolulu. Registered to Larry Doheny, Larry will be skipper, his brother, Bill, navigator; and Bud Smith, sailing master. Other members of the crew will be Tim Doheny, Bob Day, Dan Derby and Dr. John H. Davis.

Bishop Oil Company board of directors have accepted resignation of Director James V. Priest and elected Edwin J. Valencia as successor. Priest, it was announced, will continue to serve in an advisory capacity. Valencia has been company treasurer since 1942 and vice president since 1953. He joined Bishop in 1927. He is also a member of the board of Canadian Bishop Oil, Ltd., wholly owned Canadian subsidiary.



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Continuous Weld—Plain End	2⅜" to 4½" O.D.	Up to 40'	Standard	Fontana, Calif.
Electric Resistance Weld—Plain End	14" to 18" O.D.	Up to 40'	.250" to .500"	Napa, Calif.—Basalt-Kaiser
Electric Resistance Weld—Plain End	5⅝" to 12¾" O.D.	Up to 55'	.188" to .375"	Fontana, Calif.
Electric Fusion Weld—Expanded—Plain End	20" to 30" O.D.	Up to 40'	.250" to .500"	Napa, Calif.—Basalt-Kaiser

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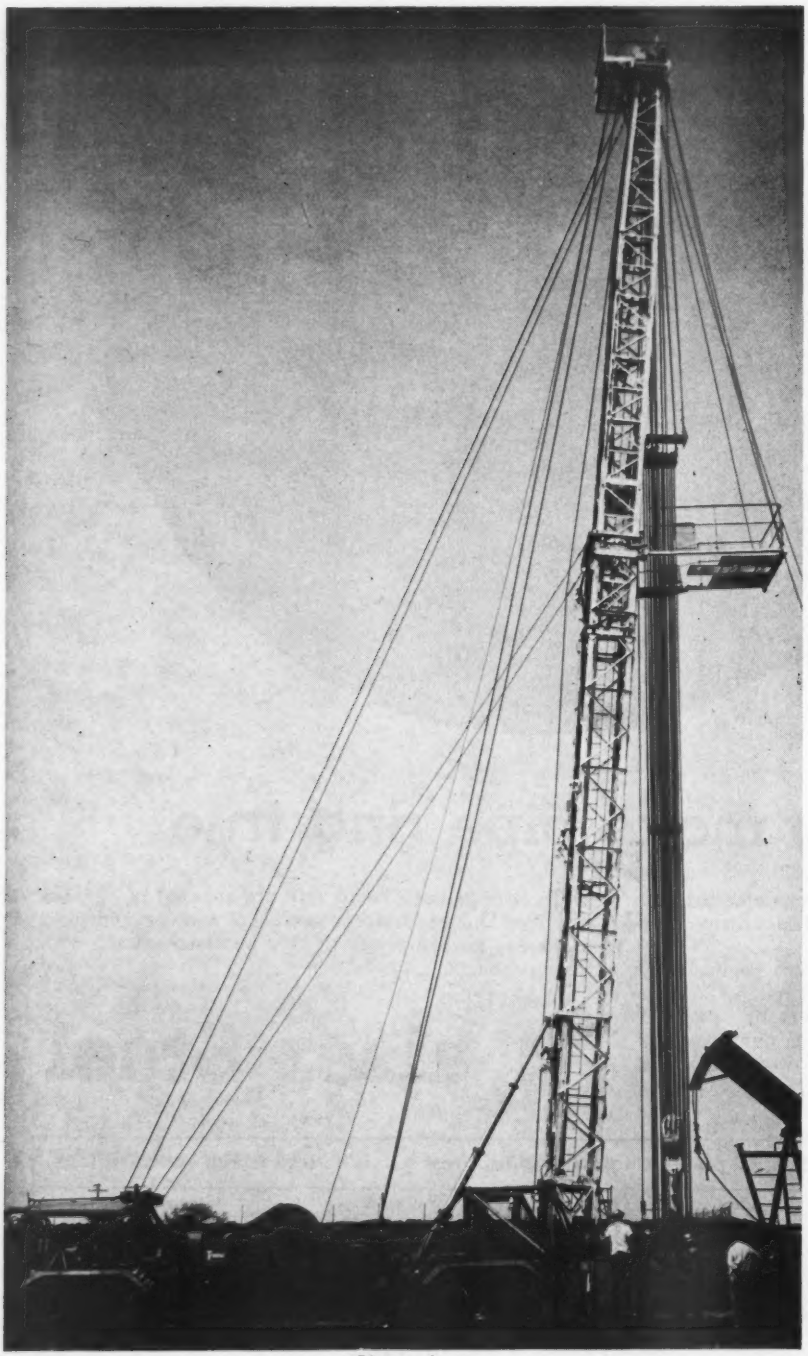
Terminal Expands Servicing Facilities

The latest acquisition of Terminal Drilling and Production Company is a Wilson Mogul Torcair double-drum Winchmobile, designed to service wells speedily, effectively, and safely to a depth of 16,000 feet. The unit, built by Wilson Manufacturing Company, was incorporated into Terminal's rapidly expanding facilities to increase the firm's operational scope. It is powered by twin GMC 6-71 diesels with torque converters which develop 294 shaft horsepower at 1800 rpm. It also features a 15-inch double Hydrotarder, facilities for operating hydraulic tongs and a number of structural



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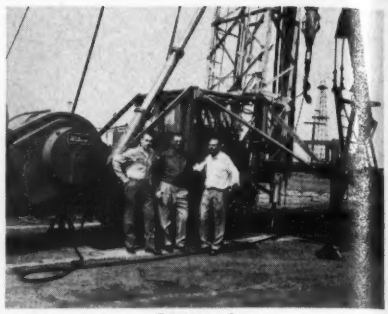

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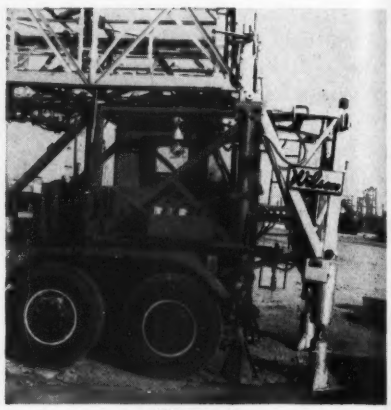

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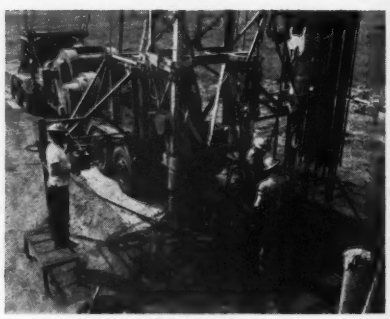
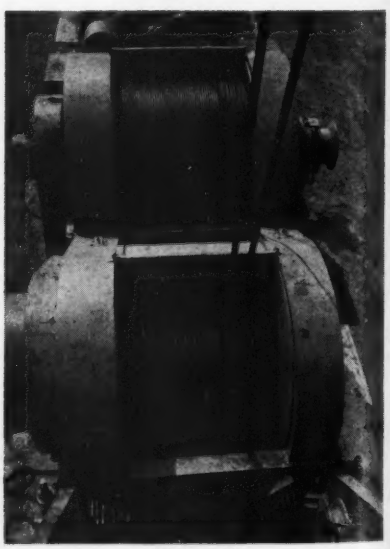


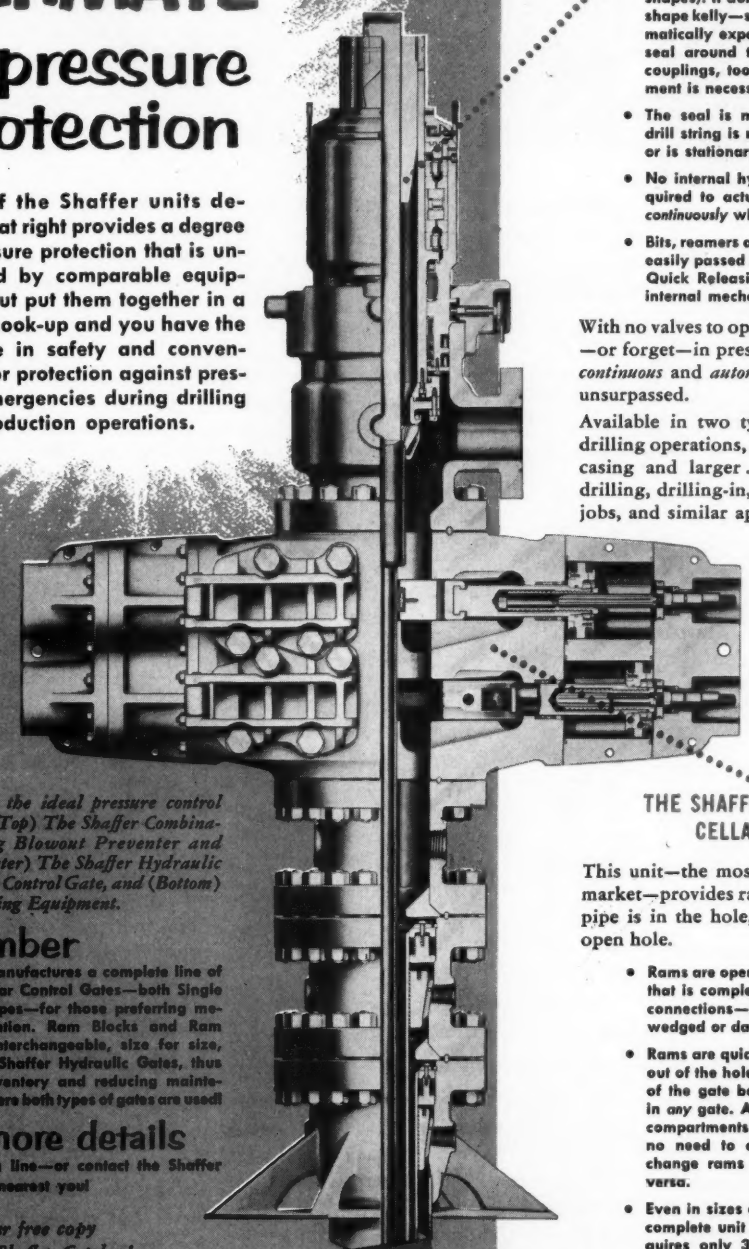
Picture 4



Picture 5

For the ULTIMATE in pressure protection

Each of the Shaffer units described at right provides a degree of pressure protection that is unmatched by comparable equipment. But put them together in a single hook-up and you have the ultimate in safety and convenience for protection against pressure emergencies during drilling and production operations.



Illustrated is the ideal pressure control hook-up . . . (Top) The Shaffer Combination Rotating Blowout Preventer and Stripper, (Center) The Shaffer Hydraulic Double Cellar Control Gate, and (Bottom) Shaffer Landing Equipment.

Remember

Shaffer also manufactures a complete line of *Mechanical* Cellar Control Gates—both Single and Double types—for those preferring mechanical operation. Ram Blocks and Ram Rubbers are interchangeable, size for size, with those in Shaffer Hydraulic Gates, thus simplifying inventory and reducing maintenance costs where both types of gates are used!

Want more details

Just drop us a line—or contact the Shaffer representative nearest you!

Send for your free copy of the latest Shaffer Catalog!

THE SHAFFER COMBINATION ROTATING BLOWOUT PREVENTER AND STRIPPER

This unit provides—in compact space—every necessary feature for efficient, simplified pressure control while the drill string is in the hole . . .

- **It *automatically* maintains a continuous seal around the different diameters and shapes in the drill string (except bits, reamers and similar abnormally large shapes). It automatically seals around pipe and any shape kelly—square, hexagon or octagon—and automatically expands and contracts to maintain a tight seal around the varying diameters of kelly, pipe, couplings, tool joints, subs, etc. No manual adjustment is necessary!**
- **The seal is maintained automatically whether the drill string is rotating—is being raised or lowered—or is stationary.**
- **No internal hydraulic or mechanical pressure is required to actuate the unit—the seal is maintained *continuously* while the drill string is in the hole.**
- **Bits, reamers and other abnormally large tools can be easily passed through the unit by merely rotating the Quick Releasing Bonnet ⅛ turn and removing the internal mechanism as a unit. It's simple, quick!**

With no valves to open or close, nothing to remember—or forget—in pressure emergencies, this unit gives *continuous* and *automatic* pressure protection that is unsurpassed.

Available in two types—Type 50 for all kinds of drilling operations, including drilling through 10¾" casing and larger . . . and Type 51 for slim hole drilling, drilling-in, re-work operations, production jobs, and similar applications.

THE SHAFFER HYDRAULIC DOUBLE CELLAR CONTROL GATE

This unit—the most advanced Control Gate on the market—provides rams for shutting off the well when pipe is in the hole, as well as rams for sealing off open hole.

- **Rams are opened and closed by *direct* hydraulic drive that is completely enclosed. No yokes or secondary connections—no exposed moving parts to become wedged or damaged.**
- **Rams are quickly changed—whether the pipe is in or out of the hole—by simply opening doors in the side of the gate body—the fastest, easiest ram changes in *any* gate. And rams in both the upper and lower compartments are changed with equal ease. There's no need to dismantle the upper compartment to change rams in the lower compartment — or vice versa.**
- **Even in sizes as large as 13⅝" (12" Series 900) the complete unit (including *two* ram compartments) requires only 30" cellar height—smaller sizes even less. What's more, these compact dimensions are *fixed*—there's no need to allow extra space at the *ends* for expanding the gate to change rams . . . nor is extra space required above the gate to replace the rams. Shaffer compactness is *real* compactness!**
- **With Shaffer Gates, the same compact design is equally efficient for either low or high pressure operations. There's no need to choose between compactness and full pressure protection. The same basic Shaffer design gives BOTH!**

There are many other advancements built into Shaffer Hydraulic Double Cellar Control Gates—and the same features are also available in a complete range of Shaffer Hydraulic *Single* Cellar Control Gates for those preferring this type of installation.

See the Shaffer Section of your latest Composite Catalog.

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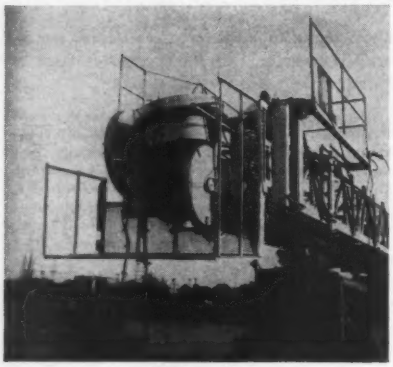
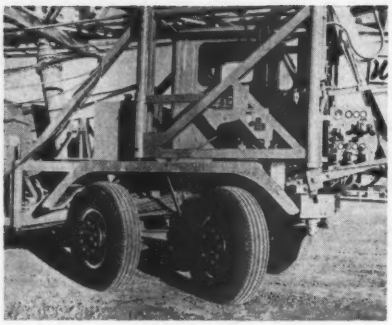
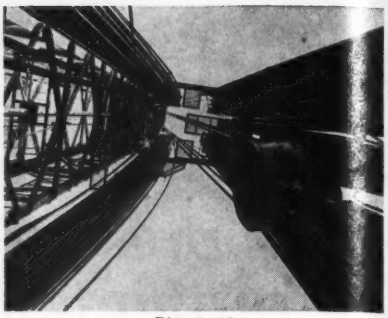
FARMINGTON, NEW MEXICO, Shaffer Tool Works, Post Office Box 546
CASPER, WYOMING, Shaffer Tool Works, Post Office Box 1788
EXPORT SALES OFFICE: Shaffer Tool Works, 500 Fifth Avenue, New York, N. Y., U.S.A.



Picture 6



Picture 7



Picture 8

and mechanical innovations, chief of which are illustrated in the accompanying group of photographs:

The Wilson fabricated mast, 96 feet in height, as shown in picture No. 1, has full box section construction with a specially devised bracing system that adds strength and rigidity to the front legs without any appreciable added weight. The upper section is designed to provide maximum clearance for the blocks. Raising and lowering is done hydraulically. In over-the-road position, the package meets all dimensional and safety requirements of the State.

The rig, shown in picture No. 2, is equipped with Torqmatic transmission, universal drive to heavy duty bevel gear transfer, with roller chain drive to the drums. Here, posing in front of the rig are, left to right: John Carmichael, petroleum engineer, and Boyd Mayfield, production superintendent of Terminal Drilling and Production Company, and Paul Carpenter, Power Rig & Equipment Company representative.

The hoist, shown in pictures Nos. 3 and 4, is operated by air with remote-control Wichita Air Tube Disc-type clutches and manually controlled brakes on both main and sandline drums. The operator, as shown in the picture, takes his stance at the end of the outrigger where he has an uninterrupted view for rod, tubing, or sandline work. The elevated sandline enables him to watch the spooling while he still has the well-head clearly in view. The outrigger, carrying the control panel folds neatly into the over-the-road package when traveling.

Rod pulling jobs are expedited by double lines, as shown in picture No. 5. New Wilson wedge type wireline socket permits switch back and forth from single to double lines as desired and in quick time.

A unique crown, shown in picture No. 6, features large 30-inch diameter sheaves with 36-inch fastline sheave, all arranged for direct clean fall of the blocks, and the minimum fleet angle between the crown and the ground.

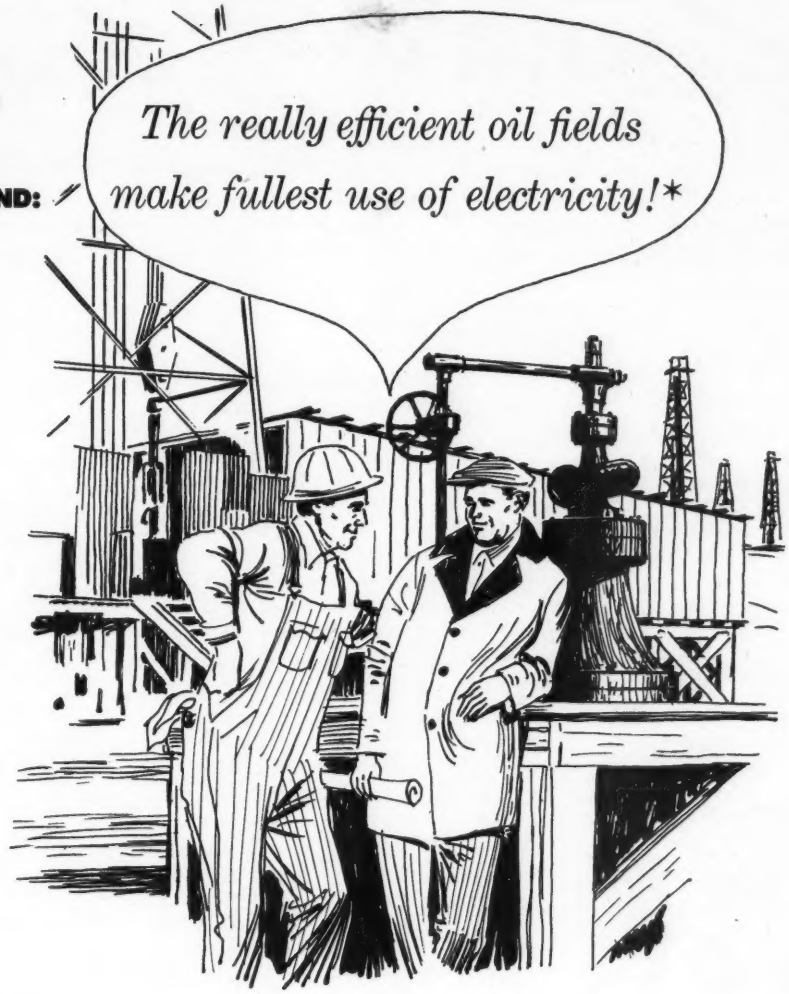
Hoist frame, as shown in picture No. 7, is fabricated integral with the truss-type vehicle frame. This design has been successfully tested on prior trailer type rigs. It gives maximum strength with minimum weight. Driver's cab is mounted forward over dual steering axles for clearest vision. Axles are equipped with air-power steering and are affixed to the frame with rubber-cushioned, solid, walking beam mounting. The rear drive assembly is similarly mounted. Power is from the GMC diesels through torque converter and Torqmatic transmission to a heavy-duty dual axle drive. All wheels have Westinghouse air-brakes.

Rod hangers, shown in picture No. 8, are suspended from the crown by wire rope and are hinged to swing out easily into locked operating position. They accommodate rods up to 1⅛ inch and total racking capacity is 12,000 feet of doubles. An air transfer cylinder, with a 48-inch stroke, controlled by the derrick man through a foot lever, transfers rods from links to hangers. The hangers fold back into the mast when the rig is in over-the-road position.

Sunray Oil Search Still Widening Out

Sunray Oil Corporation's exploration and development work appears on the ascendancy in California and elsewhere. The company has been particularly active in this state at Beehive Bend in Glenn County, where the company recently programmed a dozen new drilling jobs. One of Sunray's strongest assets is what it has accomplished in the Guijarral Hills field, 200 miles south of San Francisco, and in the Newhall-Potrero field, 40 miles north of Los Angeles. Digressing for a moment, the question has often been asked as to how Sunray got its official name. To be brief the name "Sunray" was coined from the names of two Oklahoma City families—A. W. Son, an incorporator of the company, and a Mr. Ray, business associate of Son's, whose Christian name is not recorded. In May of 1952, W. C. (Bill) Whaley, formerly a vice president, was named Sunray president. Whaley, long one of the California oil industry's favorite sons, first became acquainted with the petroleum business in 1910. He garnered a wealth of valuable experience and served with distinction with various oil organizations in California, Wyoming, Oklahoma, Texas, Montana and Kentucky. He joined Barnsdall Oil Company in 1924, became a vice president of that organization in 1931 and was elevated to general manager of that firm's California operations in 1941. He was a director of the former Barnsdall Oil Company and joined Sunray in June of 1950 as a director and vice president when Barnsdall was merged with Sunray.

WORD GETS AROUND:



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Personalities IN THE NEWS

Tide Water Associated's Avon Refinery Promotes Two

Two promotions have been made in Tide Water Associated Oil's Technology Department at its Avon Flying A refinery, Oscar Larson, Refinery Manager, announced recently.

Harold J. Maddock

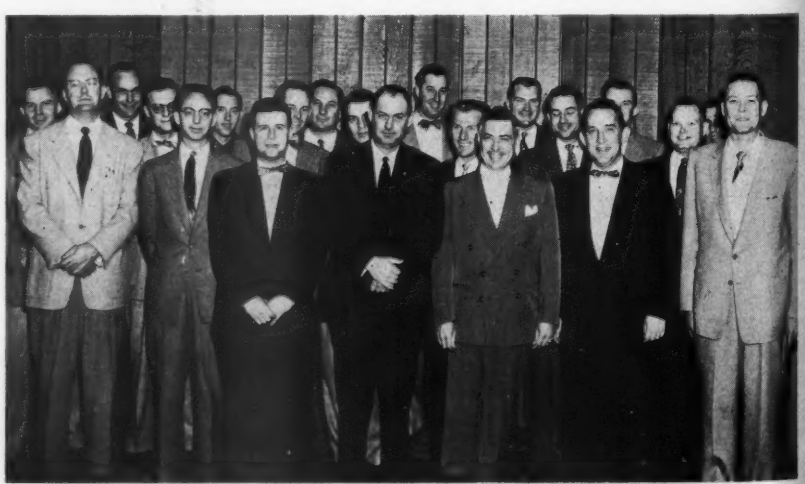
Harold J. Maddock of Concord, Calif., has been advanced to Chief Technologist responsible to Chief Chemist Louis Mittelman. He joined Tide Water as a laboratory chemist at the refinery in 1943, following graduation with B.S. Degree in Chemical Engineering from the University of Washington in Seattle the same year. Maddock was on leave of absence with the Petroleum Administration for Defense in Washington, D. C., for nine months in 1953 as a petroleum technology specialist.

James F. Dehnert of Martinez, Calif., who started as a junior chemist in 1946 at the Flying A refinery in its control laboratory, has been made Assistant Chief Technologist, replacing Maddock. Dehnert is a graduate of Washington State College, Pullman, Wash., with a 1946 B.S. Degree in Chemical Engineering.

Schlumberger Schedules Interpretation Conference

Schlumberger Well Surveying Corporation has scheduled its annual Interpretation Conference at the Huntington-Sheraton Hotel, Pasadena, beginning Monday, June 6 and continuing through Friday, June 10, 1955, according to an announcement by M. E. Loy, Pacific Area Manager. These California conferences which normally attract over 400 of the petroleum industry's active drilling engineers, geologists, and technologists, are part of a national program. They consist substantially of a symposium on oil well logging equipment and techniques and they offer a practical education in the use and interpretation of most of the commonly employed logging systems, as well as an opportunity for those already familiar with the normal processes to expand their knowledge through a curriculum of lectures, forum discussions, and actual work sessions. The Schlumberger Corporation has pioneered the development and application of various highly technical well logging methods and services and the purpose of these annual conferences is largely to aid its clients in keeping abreast of the most modern developments in method and interpretation. The sessions will this year be compressed into a one-week interval instead of the four-week span formerly employed. Registrations must be made in advance and can be arranged at the nearest Schlumberger location.

Sunray Oil Company announces new appointments at the general field offices at Newhall-Potrero. J. E. Klipp now heads petroleum engineering and all related activities, and subsurface geological work in connection with producing properties. Myron R. Elliott has taken over operations of the drilling engineering section, replacing Fred Williams who recently resigned. Elliott is supervising all engineering work concerned with drilling wells. J. O. McDonald heads the production engineering section and all work associated with bringing oil to the surface.



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ON THE WEST COAST, 5959 South Alameda, Los Angeles

Dr. Williams of Baroid Dies

Dr. Francis Jesse Williams, Director, Research and Development Laboratories, Baroid Division, National Lead Company, died March 19, 1955, at Houston, Texas. Dr. Williams was born in Wellsburg, New York, May 15, 1907. He received his B.S. degree from Alfred University in 1928 and his Ph.D. (Ceramic Engineering) from Ohio State University in 1932. After completing his graduate work he joined the faculty of Pennsylvania State College, later becoming assistant professor prior to his departure in 1935.

Dr. Francis J. Williams

Dr. Williams became affiliated with the National Lead Company in 1936 when he became the first incumbent of the National Lead Company Fellowship at Mellon Institute, Pittsburgh, Pennsylvania. In connection with fellowship work which he conducted while at Mellon, he was active in solving technical production problems at National Lead Company plants in the St. Louis area. In 1939 he was transferred to the National Lead Company Research Laboratories at Brooklyn, New York, where he became head of the Research and Development Department. From 1948 to 1950 he served as Technical Director of the research laboratories. During the time Dr. Williams was associated with the Brooklyn Laboratories, he was instrumental in the development of many new products, particularly in the field of lead chemicals, organic lead compounds and pigments. In 1950, he joined the Baroid Division of the National Lead Company as Director of the Research and Development Laboratories, a position in which he served with outstanding ability until his death.

Since his association with the Baroid Division, Dr. Williams has been responsible for a major portion of the organization and accomplishments of the Division's research and development program. Among the contributions he has made to the Division are his many technical papers touching on various phases of the Company's activities. Much of the Division's Bentone development has been made possible through his experienced guidance. Dr. Williams possessed a seemingly inexhaustible supply of technical knowledge which never ceased to amaze those who were associated with him.

He was a member of many technical and social organizations including the American Chemical Society, American Ceramic Society, American Association for the Advancement of Science, Society of Rheology, American Petroleum Institute, Industrial Research Institute, Masons, Sigma Xi, Alpha Chi Sigma, Phi Lambda Upsilon, and Lambda Chi Alpha.

Dr. Williams was vitally interested in public education and served actively as a member of the Board of Education at Port Washington, New York. He was also a trustee of Alfred University.

Dr. Williams is survived by his wife, Jean C. Williams, and their five children.

Commenting on the general oil picture in the Pacific Northwest, Robert L. Minckler, General Petroleum Corporation president, in a recent speech before the Chamber of Commerce forum at Portland, Ore., said:

"I expect an increasing interest to be shown in land leasing, geological and geophysical exploration, wildcat drilling, and hopefully, oil production."

He recognized that local geological conditions in the Northwest are not as promising for exploration as others. But all the same, he said, some parts of the region indicate sedimentary conditions which may lead eventually to development of commercial petroleum.

Directors of the new Manley-Kuhns Petroleum Corporation are Robert Manley, John Kuhns and Margaret Bennett. Offices are maintained at 512 north La Brea avenue, Los Angeles.

Members of the Commercial Club in San Francisco learned about the effect of Federal regulation of independent gas producers in a speech recently delivered at the club by Paul Kayser, El Paso Natural Gas Company president. His company at present is supplying about two-thirds of the natural gas used in California.

Ty Scoggins, formerly of Shell Oil's public relations staff in New Orleans, has joined that same department at Los Angeles.

Several widely known members of the oil fraternity in Bakersfield have organized a new company named Gas Oil Leasing Development Company. Those actively identified with the new company include Bill Mazzie, LeRoy Barnett, John Muir, Frank Goldman, James Mello, Dr. E. B. Hougham and John J. Kovacevich.

Elmer Olsen, assistant to the vice president of Standard Oil of California at Los Angeles, will be general chairman for the annual banquet of Junior Achievement of Los Angeles to be held May 12 at the Los Angeles Statler.

A prized possession of Fred M. Keller, Sr., father of the president of the Oceanic Oil Company at Los Angeles, is one of the oldest, if not the oldest, automobile emblems of the Automobile Club of Southern California.

Jack Vaughn, Standard Oil of California at Taft, served as chairman of the committee in charge of the recent Standard golf tournament at Buena Vista golf course. The tourney was open to all members of the company's northern division and to retired employees.

Ruth Randall

The school teacher who owns an oil company

RUTH RANDALL teaches Latin at San Bernardino High School, San Bernardino, California.

In 1939 she invested part of her savings in 50 shares of Union Oil Stock. This makes her—along with some forty thousand other people—an owner of the 45th largest industrial company in the country.

And entitles her to examine the report card on our sixty-fifth year of business.

It was the largest in our history. Our customers paid us $351,731,678. We didn't keep all of this, of course.

16.8% we paid to our 8700 employees as wages and benefits.

4.8% went for taxes. (This does *not* include $60,000,000 additional in fuel taxes which we collected for the government.)

68.2%—by far the lion's share—we divided among more than fifteen thousand other companies and individuals with whom we do business.

This left us net earnings of 10.2%. From which we paid shareholders like Miss Randall 4.5% as dividends for the use of their money, and reinvested the remaining 5.7% in necessary expansion and modernization of facilities.

We hope Miss Randall is pleased with this report. We are certain she should be pleased with herself. For in wisely investing in American industry for her own security, she has helped to create a higher standard of living for everyone.

* * * *

YOUR COMMENTS ARE INVITED. *Write: The President, Union Oil Company of California, Union Oil Building, Los Angeles 17, California.*

Union Oil Company OF CALIFORNIA

MANUFACTURERS OF ROYAL TRITON, THE AMAZING PURPLE MOTOR OIL

Field Development

Moorpark Wildcat Redrilling Ahead

Robert S. Lytle, Operator, who recently suspended drilling in Williams No. 2 wildcat on Section 33-3n-19w at Moorpark in Ventura County, is redrilling below 5000 feet with No. 1 test on the same section. No. 1, which is some 1000 feet north of the second test, was abandoned last November. However, when the followup wildcat failed to live up to expectations and in consideration of additional geologic information garnered, the operator decided to go back to No. 1 and redrill. U. S. Drilling Company is doing the work on contract. On Section 27-2n-19w, Intex Oil Company's McCrea No. 1 explorer continues to dig at a depth under 3000 feet. Intex owns a 50 per cent stake in 1547 acres on what is described by the company as a faulted anticlinal nose.

Santa Cruz Again Tested

Having relegated its No. 1 exploratory well on Santa Cruz Island to history, Richfield Oil Corporation is moving ahead in the relatively shallower formation with its No. 2 wildcat on Section 18-2s-28w. The drilling campaign, which is being carried on in the Santa Barbara channel and about 24 miles from the mainland, was preceded by a year-long geological survey. This is the first drilling on Santa Cruz, although nearby Santa Rosa Island has been put to test on several occasions during the past 30 years. These earlier tests evidently picked up showings, but of no particular significance. Among those identified with the most recent drilling on Santa Rosa were Signal Oil & Gas Company and Bill Pemberton, respectively.

Somis Wildcat Ready to Drill

Just about to spud-in is Humble Oil's Berylwood Investment Co. No. D-2 test on Section 19-2n-20w at Somis, where The Texas Company recently accounted for a new and small Ventura County discovery. Humble's first test in the area, No. D-1, was abandoned last October after going the first time to 7025 feet and then drilling to 6500 feet and 5960 feet on a second redrill. At Saticoy, Humble has abandoned at 10,122 feet its Louis A. Gisler et al No. 1 project on Section 3-2n-22w.

Ventura County Wells Go Deep

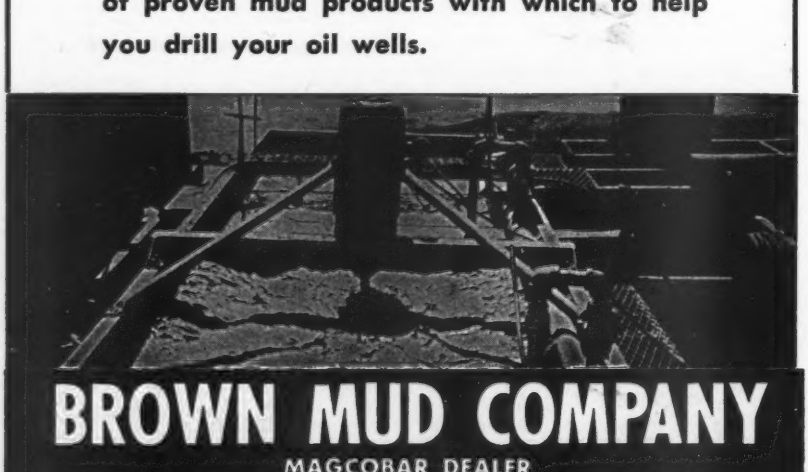
Accent on new exploratory drilling in Ventura County is indubitably on depth. For instance, General Petroleum's Edwards No. 1 on Section 19-4n-18w at Piru is drilling below 14,300 feet, Shell Oil Company's S.P.S. No. 2 on Section 29-3n-21w at West Mountain went first to 12,020 feet, and Standard Oil's Vanderkaar No. 1 on Section 2-3n-21w at Santa Paula has reached well below 13,000 feet. Several other projects in the county are moving deep.

Guadalupe Field Drilling Scene

At San Luis Obispo County's Guadalupe field, Union Oil Com-

OUR ENGINEERS

are experienced specialists in California oil well drilling mud problems. They have years of on-the-job-know-how, plus a complete line of proven mud products with which to help you drill your oil wells.



BROWN MUD COMPANY

MAGCOBAR DEALER

DIXON RIO VISTA 4-0813 | VENTURA Miller 3-8168 | LOS ANGELES WEbster 3-5618 | BAKERSFIELD FAirview 2-6410

pany has going its LeRoy No. 1-11 well on Section 1-10n-36w, with Santa Fe Drilling Company in charge. Present depth is around 1800 feet.

Oakview Project Drilling Ahead

A. D. Rushing at this writing is not far above objective depth of 3000 feet with his John V. Newmark No. 1 test on Section 29-4n-23w at Oakview in Ventura County. Location is about 1000 feet east of Amerada Petroleum Corporation's Wadleigh No. 1 wildcat, which Rushing took over and tested for something less than commercial oil last fall.

San Luis Obispo Registers Duster

Pismo Oil Company's Mello No. 2 test on Section 29-31s-13e in the Edna sector of San Luis Obispo County has been written off at 1505 feet. In the Huasna area, Humble Oil's Tar Springs No. 2 wildcat on Section 25-32s-14e pumped at the daily rate of 60 barrels of fresh water along with some oil from a plugged depth of 3465 feet. Total bottom is 4449 feet.

Beehive Bend Gas Producer In

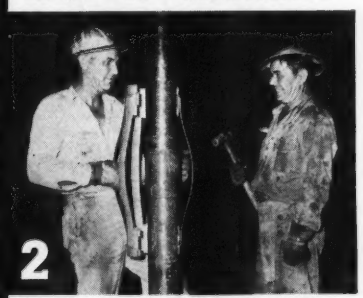
General Petroleum Corporation has completed its Wolcott-Capital Unit No. 1 test on Section 13-19n-2w in the Beehive Bend area of Glenn County at a plugged depth of 7442 feet for 416,000 cubic feet of gas daily through a 12/64-inch choke. Contract driller was Brown Drilling Company.

West Montalvo Test Drilling

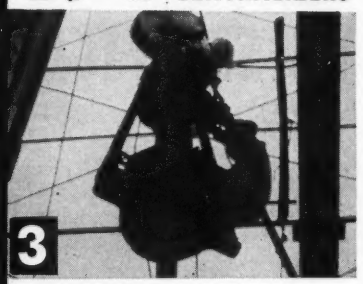
Sunray Oil Corporation's Sunray-Ohio - Kraemer - Del Cielo No. 1 wildcat well on Section 31-2n-22w in the southeast corner of the West Montalvo area keeps drilling ahead toward a designated objective of 14,000 feet or so. The drill site is amidst a lemon grove, where the operator purchased many of the trees before moving in. On Section 5-1n-22w at Montalvo, also making fast time with the drill at an intermediate point is the E. L. Doheny, Operator, Doheny - Richfield - Laubacher No. 1 test.

3 REQUIREMENTS For a GOOD Cement Job

1 B and W Scratchers



2 B and W LATCH-ON CENTRALIZERS



3 MOVEMENT OF CASING *

*The highest percentage of successful cement jobs result from . . . mud removal and prevention of channelling by . . . movement of the casing, from the time casing reaches bottom until the plug "bumps."

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Orcutt Field Well Completed

Shell Oil Company has completed its Careaga No. B-1 well on Section 31-9n-33w of Santa Barbara County at 3699 feet for a present output of 49 barrels of oil, cutting 55 per cent, and 54,000 cubic feet of gas a day. The well is bottomed at 3699 feet.

North Rincon Wildcat Quits

At North Rincon in Ventura County, Superior Oil Company's Delwiche No. 1 wildcat project on Section 36-4n-25w has come to naught at 4960 feet and abandoned.

Midway-Sunset Test Well Listed

E. L. Corwin, Operator, has staked location for Kern Project No. 2 on Section 15-32s-23e or about 700 feet southeast of his Kern Project No. 1 on the same section in the Midway-Sunset field. The play is a joint enterprise with Jade Oil Company, owner of the fee land on which the wells are located. No. 1 was carried to a total depth of 3520 feet and for a time it appeared that deeper down something of interest had been brought to light. However, when nothing exciting came to pass, the project was plugged back to 2810 feet for regular tests. The true picture of what No. 1 can do was not available as this is jotted down. Oceanic Oil's C.W.O.D. No. D3-7 deep test on Section 7-32s-23e near Fellows is drilling under 8000 feet and probably is near the Carneros zone. It may be that the operator will elect to go as deep as 15,000 feet for a test of the Point of Rocks sand in the Eocene formation. Standard's No. 57-13C on Section 13-32s-23e at Taft is down 7458 feet, but interrupted by a fishing job in its quest for a deeper pool. On Section 25-32s-23e in the Midway-Sunset field, Safe Oil Company has chalked up its Safe No. 8 at 1675 feet for 30 barrels of 14 gravity oil a day, with initial cut quite high.

Buena Vista Test Drills

Drilling is at a point below 5500 feet with Gene Reid Drilling Company's Dougherty No. 1 wildcat venture on Section 30-32s-25e in the Buena Vista area of Kern County.

Ducor Wildcat Ready to Drill

Southeast of Ducor in Tulare County, Philadelphia Oil Company's Konda-Bryce No. 1 wildcat venture on Section 12-24s-27e is ready to drill. Contractor is Barnes Core Drilling Company.

Posuncula Test Keeps on Drilling

Scheduled as a deep test of the Eocene sand, which is anticipated around 15,000 feet, Shell Oil's Posuncula No. 1 wildcat on Section 12-30s-25e at last reports was approaching the 13,000-foot level. Casing is set in the project through a productive Stevens sand interval which on test at 9535-9592 feet showed 30 gravity oil in substance. In the event the deeper zone fails the well probably will be plugged back and given the final touch in the Stevens zone. Kern County Land Company owns all of the ground round-and-about the wildcat. Driller is Rocky Mountain Drilling Company.

Lerdo Wildcat Drilling Ahead

In the North Lerdo area of Kern County, where back in 1938 Standard drilled to approximately 11,000 feet without success, the company is trying there again with its KCL 37 No. 33-37 on Section 27-28s-26e. This prior test, two miles west of the current effort, found the Rio Bravo just above 11,000 feet, but it failed to produce in worthwhile fashion. No. 33-37 at last reports was carving away below 6000 feet, with Newton Drilling Company in charge.

Arvin Test Well Staked

Green Petroleum Company of Long Beach has staked location for Kirkorian No. 1 test on Section 24-31s-29e and east of Arvin in Kern County.

Madera County Wildcat Planned

Highland Oil Company is doing preparative work for its Biancuchi No. 1 exploratory project on Section 31-12s-14e, three-quarters of a mile west of Firebaugh in Madera County. Prospecting will be carried to no less than 5500 feet, it was reported.

Delta Farms Wildcat Digs

Approximately 15 miles northeast of Coalinga, Honolulu Oil Corporation is drilling its Indian Westates No. 25 wildcat on Section 8-19s-17e in the Delta Farms area, Fresno County. The project, last reported nearing 10,000 feet, is designed to scrutinize all formations to the Eocene. Contractor is Hayes & Sprague.

Semitropic Test Will Go 8000 Ft.

A depth approximating 8000 feet is the final target of Humble Oil & Refining Company's Arthur A.

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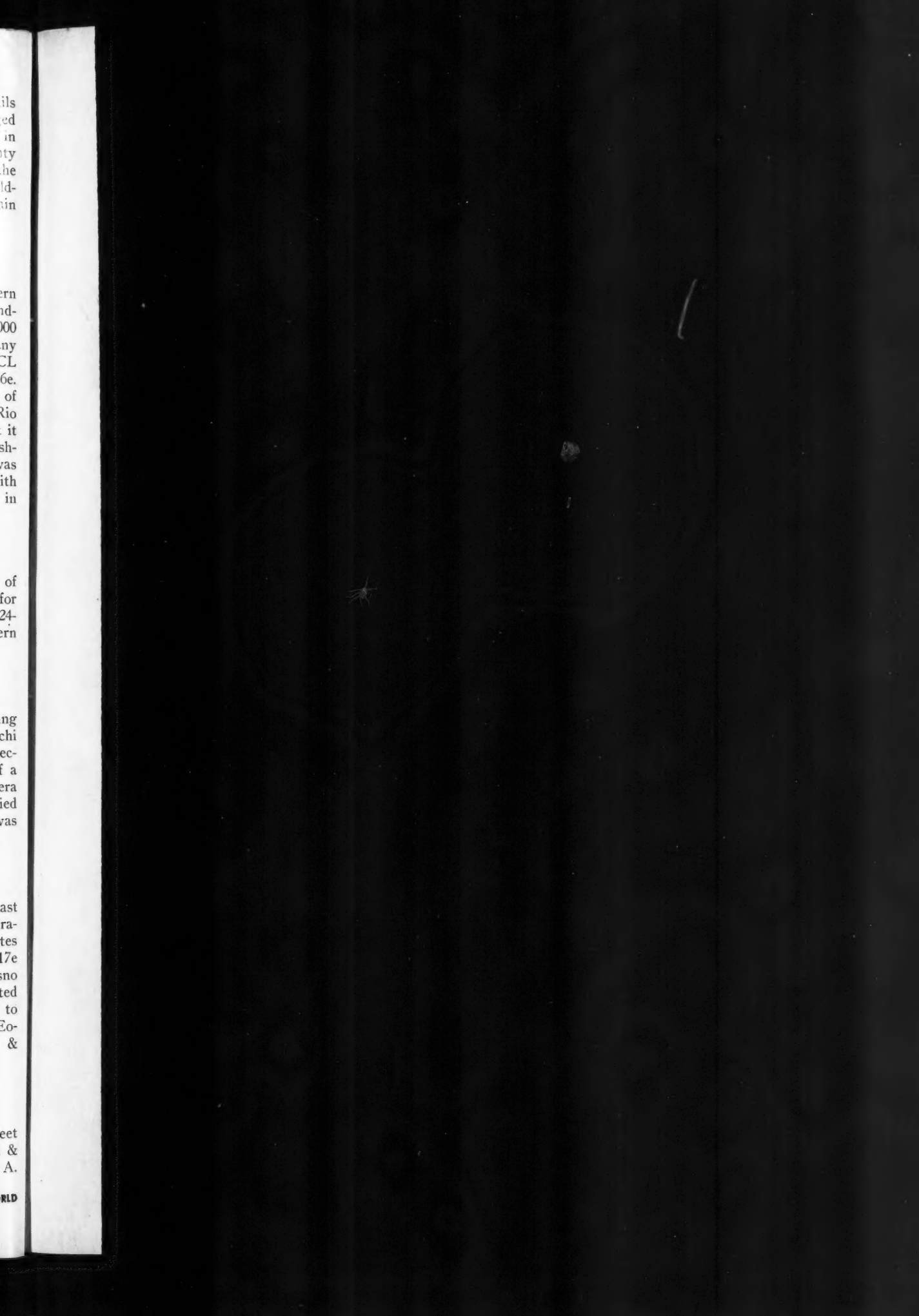

Conn et al No. 1 wildcat project on Section 9-27s-23e in the Semitropic area, east of Lost Hills in Kern County by 10 miles. The field was discovered by Standard in 1935. It is made up of flat sagebrush land eight miles west of Wasco and 30 miles northwest of Bakersfield.

Tulare Lake Test Staked

Approximately 3500 feet is the objective depth of Moriqui Exploration Company's Salyer Farms No. 1 wildcat test, starting work on Section 17-22s-20e at Tulare Lake in Kings County.

Edison Area Activity Brisk

Kalpure Oil Company is preparing to drill its third well on a 60-acre lease on Section 16-30s-29e in the proved West Edison field. Two wells were put down on the lease last year. The first was a producer and the second a dry hole. On Section 26-30s-29e, Inca Petroleum's St. Julian No. 1 has been abandoned at 2820 feet. On formation test of 100 feet of zone off bottom, recovery was made up of mostly thick mud, with oil showing in the lower part. The company is now engaged in follow-up work. T. & T. Oil Company is at the point of spudding-in its Baughman No. 2 test on Section 8-30s-29e. Miller & York will handle the drilling.

South Belridge Test Now Inactive

Temporarily suspended at 5031 feet after attempts to recover all fish failed is the apparent status of Arthur C. Fisher's Buena No. 1 wildcat on Section 10-29s-22e at South Belridge. Fisher's main oil interests are in Cuyama Valley.

Cymric Project Started By Intex

The Oceanic sand will be taken in by Intex Oil Company's Cymric No. 13, which just left the starting line on Section 21-29s-21e in the Cymric field of Kern County. It is understood that upon completion of No. 13, the company will redrill its No. 21 well to the Phacoides sand. The company has a 320-acre lease in the area.

Russell Ranch Well Pumps Oil

Richfield Oil Corporation has completed its F. R. Anderson No. 176-25A well in the Russell Ranch field in the Santa Margarita sand, the zone which figured in the Cuyama Valley discovery well. Drilled to a total depth of 2010 feet, the well went on the pump for several hundred barrels of 26.3 gravity oil a day, with representative gauge yet to come. Interestingly enough, the drill site is slightly less than a mile southeast of Norris Oil Company's Cuyama No. 2, completed seven years ago and the bellwether of what has happened in the valley since then. Southwest of the Russell Ranch field, Richfield is preparing to drill its Russell A No. 55-7 on Section 7-10n-27w, Santa Barbara County.

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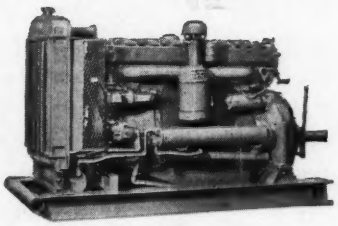

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Deer Creek Well Duster

On Section 22-22s-27e in the Deer Creek field, C. M. Page and J. L. Davis have walked away from their Dunham No. 1 well at a total depth of 874 feet. McGreevey-Neary Oil Company has locations staked for Hastings No. 1 and Holzworth No. 1 on Section 27-22s-27e. T.B.I.D. No. 3 on the same section is idle at 942 feet.

Sunset Beach Holds Interest

Drilling has been sustained without interruption since the Hou-Tex Production Company of Houston, Tex., spudded-in the other week its Arvanitis No. 1 test on Section 19-5s-11w near the corner of Ocean avenue and Anderson street at Sunset beach, Orange County. Thomas P. Pike Drilling Company before launching the test as contractor drove piling to support drilling equipment. The well site is about one mile south of Hancock production and a like distance west of the Burt Aston discovery well. On Section 29-5s-11w, Nev-Tah Oil & Mining Company's Golden West No. 7 test has given up the search at a depth of 7010 feet. Signal Oil & Gas Company's Signal-Bolsa No. S-1-D, just underway on Section 33-5s-11w, is designed as a deeper pool test.

Oat Mountain Test Drilling

Drilling at this time is at a relatively shallow point with Union Oil Company's Wigdal No. 1 wildcat project on Section 19-3n-16w at Oat Mountain in the Aliso Canyon area of Los Angeles County. Under lease are 300 acres of which several acres are set aside for Ed Pauley, who a couple of years ago deepened Standard Oil's Wigdal No. 1 test.

Elizabeth Canyon Wildcat Test Works

In the Elizabeth Canyon sector of Los Angeles County, Dafor Development Company-Hal Forst and Douglas P. Davis—is drilling a few hundred feet below grass roots with Lyon Ranch No. 1 wildcat venture on Section 5-5n-16w. Location is not far from Standard's Lyons No. 1, which was completed last January for a little oil.

Del Valle Field Lincoln Well In

Union Oil's Lincoln No. 21, a fresh completion on Section 16-4n-17w in the Del Valle field, at last reports was putting out 21 barrels of 33 gravity oil a day, cutting 62 per cent. The well is bottomed at 6180 feet. The company is well below 10,500 feet with its Lincoln No. 20 on the section.

Castaic Hills Extension Sought

The Texas Company's Fischer No. 2, in the primary stages on Section 34-5n-17w, is trying for a southwesterly extension of the Castaic Hills field in Los Angeles County. On Section 8-5n-14w at Mint Canyon, Webb Oil Company's Alma No. 1 wildcat is idle at 2965 feet.

Leffingwell Adds New Oil Producer

Hathaway Company, one of the earlier developers of the Santa Fe Springs field, has accounted for a new well in the Leffingwell area. Its Woodward No. 3 near the intersection of Scott avenue and Lemon drive on Section 11-3s-11w is producing 120 barrels of 36 gravity oil a day from 8713 feet, cutting about five per cent.

Los Angeles Tests Production Failures

Richard S. Rheem as operator has pulled out at 7638 feet from his Miller Ranch No. 1 wildcat well on Section 3-3n-16w on Newhall townsite, Los Angeles County. Commercial aspect was lacking on conventional testing. Northeast of Lancaster, H. B. Proctor's Comer No. 1 test on Section 1-7n-12w has quit at 1555 feet.

West Newport Wells Drilling

Monterey Oil Company's Newport Beach No. 9 well on Section 29-6s-10w in the West Newport Beach field in Orange County is making hole at 3500 feet. The 7-inch casing has been cemented at 3810 feet in the R. B. Watkins, Operator, Deeble No. 2 well on Section 13-6s-11w. Watkins' Mills No. 2 test on the section has been abandoned at 7725 feet.

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Saugus Wildcat Drilling Steadily

No great distance from the Santa Clara River in the Saugus area, Tide Water Associated Oil Company's Newhall Land & Farming No. 36-16 wildcat test on Section 16-4n-16w is drilling ahead below 3000 feet. Thomas P. Pike Drilling Company is doing the work.

Cascade-Aliso Well On Pump

In the Cascade-Aliso area of Los Angeles County, where Teater-Wadley Company's No. 3 well on Section 25-3n-16w is drilling on an intermediate depth, M. V. Kahler's Eadie No. 1 on Section 24 is on the pump at a plugged depth of 2850 feet. Drilled to an original bottom of 2994 feet, representative gauge of the Kahler project is not yet available.

Kern County Leasing Active

Considerable new leasing is noted here and there in Kern County. Hancock Oil Company has taken 290 acres from the Giumarra Brothers Fruit Company on Section 27-31s-29e, and Signal Oil & Gas Company, 160 acres from James R. Henderson on Section 10-32s-29e in the Arvin area. Northeast of Lost Hills in The Glibreath sector, The Texas Company has leased 80 acres from Lillian Lanin in Section 33-25s-22e, and 80 acres from Estella F. Rogers in Section 5-26s-22e. Any mention of leases recalls that the other month Superior Oil Company's acquisition in the Mugu sector, south of Oxnard in Ventura County, was probably something of a record for that part of the state. The land acquired was described as spreading over all of the Broome Ranch.

Tejon Wildcat Standing Idle

On Section 14-11n-18w in the Tejon Hills sector of Kern County, Alvin O. Preszler's Preszler & Phillips No. 2 wildcat test is standing idle at 997 feet. On Section 22-11n-18w, O. M. Slosson has staked location for three wells. They are Tejon No. 41 and No. 42 on Section 22-11n-18w and Tejon No. 43 on Section

15-11n-18w. The trio will be taken under contract with Enterprise Oil Company. Steele Petroleum Company, which went back to its old Steele Petroleum-Roco No. 1-2 on Section 15-11n-18w and redrilled and deepened the hole from 624 to 634 feet, has recompleted for 10 barrels of 29 gravity oil daily, cutting somewhat high initially.

Tejon Ranch Test Redrills

Reserve Oil and Gas Company is redrilling its Reserve-E. W. Pauley No. 12-34 deep extension test on Section 34-11n-19w on the Tejon Ranch after going to 11,687 feet. The lower measures failed to live up to expectations and the company decided to back up for a fresh start. Reserve-E. W. Pauley No. 53-33 on Section 33-11n-19w has widened the company's "JV" sand production by coming in for 600 barrels of 37.2 gravity oil from intervals at 7026-7040 and 7047-7072 feet in sand about 1200 feet below the Olcese zone. The well later under further restrictions was accounting for 416 barrels of oil and 265,000 cubic feet of gas daily. Drilling & Production Company has started work on its J. V. No. 42-33 on Section 33. It is located two and one-half miles southeast of General Petroleum Corporation S.P. Tejon No. 16-3 deep project, which quit at 11,963 feet last September. During 1954 Reserve's net share of oil production from all sources, after payment of royalties, was 505,345 barrels or an average of 1385 barrels a day. Production for the year as a whole jumped 13 per cent over the 447,833 barrels produced in 1953. The company's drilled activities last year soared to an all-time high with wells in both the development and exploration category. On its Tejon properties 53 wells were drilled in which the company owns leasehold interests. Thirty-nine or 74 per cent of the wells were finaled as producers.

Clues Offered to Undiscovered Oil

Tiny pollen grains from ancient plants are clues to the climate that existed in California between 1,000,000 and 60,000,000 years ago. Such findings may offer clues that will point to undiscovered oil and gas fields. This was revealed by Dr. W. L. Norem, research paleobotanist of the California Research Corporation at La Habra, Calif., in a symposium of spores, pollens and other microfossils useful in oil exploration, at the American Association of Petroleum Geologists Oil Finders Convention in New York City. The climate in California, according to Dr. Norem, 40,000,000 to 60,000,000 years ago was warm and moist, similar to that in southern Mexico and Central America today. From that time on until the ice age, about 1,000,000 years ago, the climate became cooler and drier. At one time California was covered by vast hickory forests, not unlike those of the northeastern states today.

Dr. Frederic H. Lahee of Sun Oil Company, chairman of the association's committee on statistics of exploratory drilling, told "oil finders" that whereas one hole in every nine drilled in new territory finds some oil or natural gas, nearly 98 per cent locate nothing at all or are abandoned because they discover deposits too small to be profitable.

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"What do you think of our two candidates for senator?"

"Well now, there's one consolation: we can't elect both of them."

The American tourist walked into an Italian restaurant. "Waiter," he said, "bring me a bottle of this Benozza Vercilli listed on the menu."

"Sorry, sir," replied the waiter, "but that's the proprietor."

Foreman: "You're asking big pay for a man with no experience."

Applicant: "Well, the work is much harder when you don't know anything about it."

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Lioness to young cub chasing a hunter around a tree: "Junior! Stop playing with your food."

Tillie: "Don't be discouraged. In this world there is a man for every girl and a girl for every man. You can't improve on an arrangement like that."

Millie: "I don't want to improve on it. I just want to get in on it."

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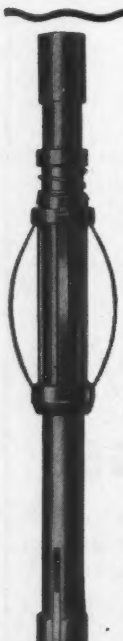

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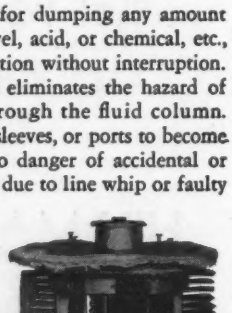

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